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JAMES PARKINSON.*

By L. G. Rowntree, M. D.,

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English born and bred, an English physician and scientist, forgotten by the English and by the world at large—such is the fate of James Parkinson.

To Mary, wife of John Parkinson, a son was born on the 11th of April, 1755. On the 29th day of the same month the child was baptized and named James. These facts are recorded in St. Leonard's Shoreditch Parish Register, Middlesex. I was unable to find the date of his birth noted in any biography.

Concerning the life of John Parkinson, father of James, nothing is known. However, while searching the old Shoreditch parish churchyard last summer for the tombstone of James Parkinson, a stone was discovered, from which time has almost erased the inscription, but upon that part of the stone which is protected by an overhanging roof or sheltering hood the following can yet be readily seen:

To
the Memory of
Jno. Parkinson, Surgeon
late of this Parish
who died on the 10th
day of Jan. 1784, in
the 69th year of his age.

An inscription of twelve lines originally followed this but the passing years have so completely effaced it, that at present only an occasional letter or word can be deciphered.

This, however, is enough; and sufficient to indicate that Parkinson was born into a family of some standing and culture and that his father lived long enough to arrange for and to personally supervise his medical as well as his preliminary education.

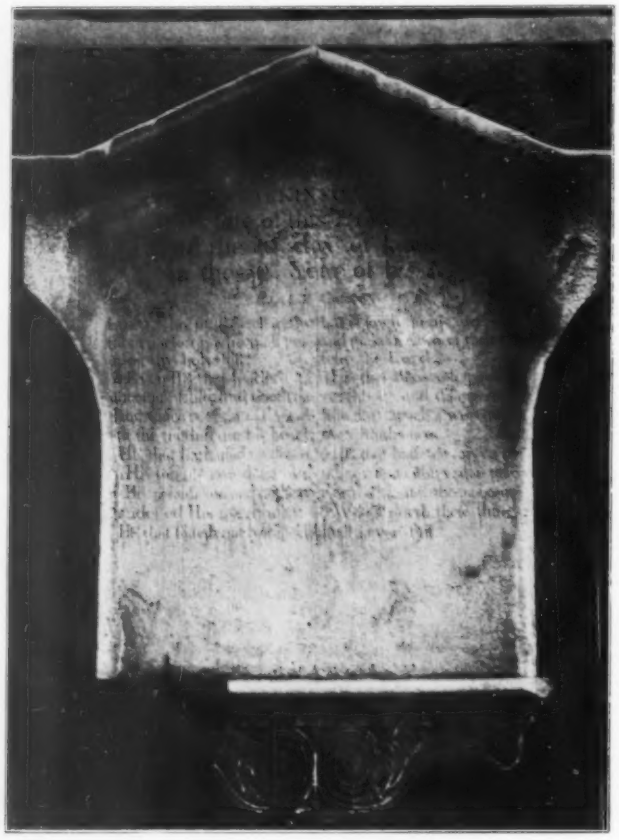
The family lived at No. 1 Hoxton Square, in the borough of Hoxton, which at present constitutes part of the East Centre of London. Formerly, Hoxton Square, surrounded by the homes of wealthy families was a most desirable residential locality. It boasted of its residents, its homes, its carriages, its servants and of all that accompanies culture and wealth.

Hoxton Square was formerly a parish square, only the residents on the square being privileged to enjoy its attractions, each family having a key whereby admittance was gained. It was an attractive place. There still stands in this park, close to Parkinson's home, an immense and beautiful plane-tree, an Oriental ansifolia, which has attained the age of 150 years. Parkinson must have known it in his youth, it grew up with him, and he must have learned to love it. Today, however, Hoxton is a public square, open to all, not surrounded by homes of the wealthy but by all varieties of small factories

*Paper read before The Johns Hopkins Hospital Historical Society, May 8, 1911.

and work shops. Marble masons, mattress makers, French polishers, cabinet manufacturers, carvers and guilders, leather embossers, drafters, plate and sheet glass makers, now occupy and carry on their work in what were formerly the homes of the wealthy and influential.

The old house at No. 1 Hoxton Square still exists. From without it has partaken of the fate that has befallen the neighborhood and suggests only age, neglect, poverty and even squalor, but from within it recalls days of prosperity, of culture and even of luxury.



Tombstone of John Parkinson.

The house is a plain old three story building facing the east, on the northwest corner of Hoxton Square. Behind the main building and connected with it is a smaller two-story one with a central door opening into the little side street. This apparently was Parkinson's office. Behind this again is another smaller building which may have served as a laboratory, as a library, or perhaps as a museum. Leading up to the deeply set, black, massive looking front door are a stone walk and deeply worn stone steps. The house is only a few feet back from the street and before it stands an old iron fence.

Uninteresting though the exterior is, upon entering this building one is impressed at the large size of the rooms and with the evidences of the prosperity of other days. We see in almost every room great carved open fire-places of elaborate design, and between some rooms large connecting arches. The deep panelling of walls and ceiling which was formerly so much in vogue is well preserved in some of the rooms on the second floor. One is surprised to find such an interesting interior behind such an uninviting exterior.

Parkinson, then, was brought up in a medical atmosphere in the midst of pleasant surroundings, inheriting his father's tastes and in all likelihood his practice, for we are informed that he, James, was already in active practice in 1785 during which year he attended Hunter's course of lectures on surgery. His father's death occurring in 1784 makes it more than probable that the practice passed from the father to the son. This probability is increased from the fact that his entire life

No. 1 Hoxton Square.

was spent in the same neighborhood, all of his books being dated from Hoxton Square and his death occurring in Kingsland Road, but a few hundred yards from Hoxton Square.

Concerning his medical education we know little, but from a perusal of his little book entitled "The Hospital Pupil" much can be inferred both as to his preliminary and as to his medical education. The title page reads:

The Hospital Pupil

or

Observations addressed to the parents of youths intended for the profession of medicine or surgery on their previous education, pecuniary resources and on the order of their professional studies with *Hints to the young pupil* on the prosecution of hospi-

tal studies, on entering into practice and on medical jurisprudence. (Written in reply to an appeal for advice from a friend educating a son.) 1800.

Parkinson here insists on the necessity of a suitable temperament and a correct attitude of the student towards the study of medicine.

After the common school education the student should possess a knowledge of Latin and of natural philosophy. As he says:

The grand object which next calls for consideration is what is the best situation in which a youth can be placed and what is the mode of study, which will most certainly secure him all the theoretical and practical knowledge, in the science of healing, which, may be obtained under the excellent arrangement for professional studies, with which the metropolis abounds.

According to the present system, the first care of the parent who has a son whom he intends shall be educated in both branches of the healing art, is to find out some gentleman of respectability who is properly established as a surgeon and apothecary. With him, paying a proper premium, he fixes his son, who has received a common school education, as an apprentice for seven years. At the end of this period he is in general, sent to one of the hospitals in the metropolis, where he attends the lectures, and witnesses the practice of the hospital for a twelvemonth or even less time, and, then if a favorable opportunity offers, takes charge of the health of some populous neighborhood.

Now, on full conviction, I assert, that of all the modes which could be devised for a medical and chirurgical education, this is the most absurd: and is the one which would most certainly exclude a young man from the chance of acquiring that knowledge, which the important situation he is about to fill, so imperiously demands.

When I consider that this has been the plan of education adopted for many of those gentlemen who with so much credit to themselves and advantage to their employers, practice both branches of the profession, in every part of the country, and that it is the mode of education which is almost universally adopted, I can not but be thoroughly aware of the consequences of the assertion that I make. It is indeed much more calculated to provoke contradiction than to obtain assent. This consideration does not, however, prevent its being hazarded, nor should it, since the opposition, I expect it may experience, will point out the great number of those who think differently from me, and who require, I venture to believe, to be freed from the delusions of a mischievous error.

The first four or five years are almost entirely appropriated to the compounding of medicines, the art of which with every habit of necessary exactness, might be just as well obtained in as many months. The remaining years of his apprenticeship bring with them the acquisition of the art of bleeding, of dressing a blister and for the completion of the climax—of exhibiting an enema.

Many young men with their minds thus sparingly cultivated are sent to the hospitals in the metropolis where in consequence of the previous mismanagement of their education, the plan of instruction, otherwise so well contrived loses all its advantages and appears with respect to such students to be fraught with equal absurdity with that which preceded it.

When the student is limited to a short term of hospital practice and does not possess extraordinary abilities and industries, the whole of that period on which his future prosperity and his ease of conscience must depend may slide away only furnishing him with a knowledge of the multiplicity of subjects of which though he is convinced they are absolutely necessary to be known, he finds himself miserably ignorant.

He then discusses the need of a preliminary training either in a university or under a private tutor and insists on the need of Latin, Greek and shorthand. In the medical course he advises: during the first year—Attendance at a course of anatomical lectures together with some knowledge of the several branches of natural philosophy; in summer read anatomy and physiology in Latin, chemistry, physics, French and German. 2d year: Anatomical lectures, physiology, practical anatomy; in summer read Haller, Monroe, Blumenbach, Bichat and Cullen, also some chemistry, natural philosophy, surgery and materia medica. 3d year: Attend clinical lectures. 4th year: Morbid anatomy, clinical work. 5th year summer: Serve as a dressing pupil, see clinical work and attend lectures. He concludes "Thus with no more expense, four or five years advance in knowledge would be obtained, the advantage of which through life must be immeasurable. In a word, I am confident that for a young man intending to practice both professions, no apprenticeship will be advisable except to a hospital, and that the advantages of attaching him to a hospital in the manner I have proposed are incalculable."

The second part of the book consists of advice and a plan of study in order that as much advance as possible can be made within the small space of twelve months.

A footnote on page 144 embodies the ideals of the council on pharmacy:

In this age of science and beneficence, it is surprising that no public-spirited and wealthy men have stepped forward to form an association and establish a fund for the purpose of ascertaining the actual properties of every nostrum, of promoting the recompense of any one who published any useful discoveries in medicine, and of furnishing with counsel, and, the means of prosecution, those whose healths have been injured and whose properties have been stolen by ignorant pretenders to medicine, whether under the characters of advertising quacks, cancer curers or regulars.

The tone of this book suggests that Parkinson was speaking of the advantages of the hospital apprenticeship from his own personal experience and his other various publications lead one to infer that he had also had the preliminary education here advised.

When twenty-six years of age he married Mary Dale in St. Leonard's Shoreditch Church on May 21, 1781. On February 11, 1783, a son, James J., was born. A second son, John William Keys Parkinson, was born on July 11, 1785. He grew up, was educated for and practiced medicine, becoming in 1834 a fellow of the Royal College of Physicians. After his father's death he continued the practice at No. 1 Hoxton Square and in 1833 published a book entitled "Hunterian Reminiscences," which was really Hunter's course of lectures on surgery which had been taken down verbatim in shorthand by his father in 1785 and later transcribed. As to the other children we learn from consulting his will that James Parkinson had at least one other son and two daughters.

The name Keys, given his son in 1783, considered in con-

nection with his will written forty years later, in which John Keys is named as an executor and as a beneficiary shows plainly that Parkinson enjoyed with Keys a long and deep friendship which lasted from his early life until his old age. In Mr. Parkinson's examination before the Privy Council[1] he was questioned concerning a certain Mr. Keys, a counsellor, without doubt the same Keys. The fact that in the will Parkinson's sister is called Mary Keys would suggest that Keys had married Parkinson's sister. Be that as it may, Parkinson enjoyed one of the greatest assets in life—a true life-long friend, concerning whom I have been unfortunately unable to discover any further particulars.

The wide-spread nature of Parkinson's interest in life was early manifested in his great activity in various directions. His clinical work did not deter him from entering other fields of thought and learning, and wherever he entered his attitude was that of fearlessness and confidence. He always attacked that which appeared wrong to him regardless of what and of whom it involved.

He partook of the spirit of the troublesome times in which he lived. He was a reformer, a radical. Born during the progress of the seven years' war, he lived during the most restless period in modern history. He saw the American fight for independence and witnessed the formation of the great new republic. He lived through the period when France was in the grip of the revolutionists, through the reign of terror, the days of Marat, Charlotte Corday, Marie Antoinette, Danton and Robespierre—days of the guillotine. He saw Napoleon carry war into every land and he probably celebrated in the great rejoicings following Trafalgar and Waterloo.

He linked arms with other reformers although the nature of the times made such action dangerous. Behind closed doors he met with them, discussed and planned for the dawn of better days for England. He was a member of secret societies whom the government feared and constantly watched. He was not content with planning but wrote on reform, his writings being eagerly read by thousands of dissatisfied spirits who though recognizing that conditions were not right, did not know who was to blame or how redress could be obtained.

In 1794 he wrote a pamphlet entitled "Revolutions without Bloodshed; or Reformation Preferable to Revolt." He opens by saying:

It having been industriously asserted that the happiness and prosperity of the people would not be at all increased by a Reform of the Representation, it has been thought proper to publish the following enumeration of those changes which in all probability might be thereby produced.

I.

The Claims of the People might be more duly attended to and their Rights restored.

II.

Taxes might be proportioned to the abilities of those on whom they are levied, and not made to fall heavier on the poor than the rich.

III.

The present system of Excising almost all the necessaries of life, as soap, candles, starch, beer, etc., etc., might be abolished.

IV.

The Poor Laws and Laws of Settlements might be amended, and a poor man not be liable to be sent to prison for moving out of his own parish to seek employment.

V.

The Game Laws might be abolished, and the farmer be no longer obliged to permit his rich and insolent neighbor to trample his fields in pursuit of an animal, which, though fed by the produce of his own grounds, the farmer himself dares not kill, but under the penalty of fine and imprisonment

VI.

Workmen might no longer be punished with imprisonment for uniting to obtain an increase of wages, whilst their masters are allowed to conspire against them with impunity.

VIII.

Some proportion might be preserved between Crimes and Punishments and the starving purloiner of a few shillings not suffer the same punishment as a murderer.

IX.

The Clergy might be provided for by an income more regularly proportioned, and levied in a more agreeable and respectable mode. A part of the vast revenues of the Bishops might relieve our numerous starving Curates.

XIII.

Families that are comparatively starving might be exempted from contributing towards the enormous sums squandered in unmerited Salaries and Pensions

XVIII.

The blessings of Peace might not be exchanged for the miseries of War, with the wicked but vain hope of riveting chains on thirty millions of men, who had resolved to be free.

XIX.

Young men might no more be trapanned from their friends to perish in the field of infamy and murder.

XX.

Our Sailors might not be dragged like felons into a service they dislike, and made accomplices in slaughter.

XXII.

Difference of Opinion in Religious Matters might not exclude men from enjoying the same benefits with their Fellow-Citizens.

XXIV.

The Expenses of the Nation might not then exceed, as they now do, the enormous sum of 80,000 £ a day—3000 £ an hour—50 £ a minute. Etc., etc.

Among other secret societies he was a member of the London Corresponding Society. Shortly after the imprisonment of Hardy, Tooke, Thelwall, Burke, etc., several members of the London Corresponding Society were placed under arrest and charged with complicity in what was termed the Pop-gun Plot. It was charged that the members of this society had formed a plot to murder George III of England. This was to be accomplished by shooting the king, during a play in the

[1] *Vide infra.*

theatre, with a poisoned arrow discharged from a pop-gun. It was also charged that the society was importing four thousand pikes from abroad and that they intended starting a revolution. Several members were seized, thrown into prison and there detained for months without being brought to trial.

Although an active member, Parkinson was not apprehended. No sooner, however, were the arrests made than he became very active, writing a long pamphlet entitled "A Vindication of the London Corresponding Society," in which he maintained the innocence of those accused and clamored against the suspension of the Habeas Corpus Act and further detention of those imprisoned without trial. He also became interested in raising subscriptions for the wives and children of the imprisoned members of the society.

In order to assist his friends in distress Parkinson did every thing in his power to have the Privy Council take some definite action. His part in the affair is clearly stated in a long letter written to Mr. Smith, one of the imprisoned. This letter appeared in 1795 in a pamphlet entitled "Assassination of the King!" In which he shows his fearlessness, but respect for the laws; also his pity for the incarcerated, and his righteous indignation with the lack of consideration and cruelty shown them.

The first intelligence I received of your being apprehended was from the newspapers. Although I sincerely regretted the situation in which you and your fellow-sufferers were placed, I could not forbear laughing at the account of a plot said to have been formed by men, whom I knew were at enmity with each other; and which proposed the destroying of the King, in so public a place as the play-house, by an arrow, which was to be armed with a miraculous poison, and to be discharged from an air-gun, leisurely levelled for aim, in the midst of a crowded audience. I concluded such a story could not obtain a moment's credit, and expected your immediate discharge.

But when I learnt that the Privy-council were proceeding with as much solemnity in their examinations, as if their political, I mean their *official* situations, were at stake, I began to suspect they had been *alarmed* into belief of the silly tale. This suspicion was, however, soon dismissed, and the more probable conjecture forced itself on my mind—that the Ministry had seized on this absurd accusation as a fortunate circumstance, which, if properly managed, might excite a sufficient degree of *fresh* alarm, to induce the public at large, but more particularly the Grand Jury, who were then sitting in examination of the bills prepared against Messrs. Hardy, Tooke, Thelwall, etc., to believe that *Treason* was actually abroad. I endeavored in vain to chase from my mind that you and your fellow-prisoners were to be held out to the world as liable to be *hanged, drawn*, and *quartered*, for your *imputed* crimes, the more certainly to secure to Messrs. Hardy, Tooke, Thelwall, etc., the same punishment, for copying the best action of the whole of the political lives of those apostates, Mr. Pitt and the Duke of Richmond.

Convinced of your innocence, and willing that ministers should not have it in their power to plead ignorance, I resolved to state those circumstances which had produced that conviction, to the Privy-council. I therefore had their Lordships informed, that I was willing, even on oath, to inform them of such facts as had come to my knowledge respecting your connection with Upton, your accuser

* * * * * * * *

Immediate on being called into the Council-chamber, one of the clerks, in consequence of a sign made by Mr. Pitt, put a book into my hand; upon opening it and discovering it was the New Testament, I closed it again and laid it upon the table. Mr. Pitt rising immediately from his seat, and addressing me rather sternly, said, 'What is that for, Sir?' and to the clerk, in an imperative tone, 'Administer the oath.' But not being disposed to take the oath with so little consideration, the following dialogue took place:

P. My Lords, previous to taking an oath, I must beg to be informed on what points I am to be examined?

Mr. Pitt (*in a softened tone*). That, Mr. Parkinson, is impossible.

A. My reason for asking that request is, because if I am to be examined respecting the business of Smith, Le Maitre, Higgins, and Upton, I shall, with the utmost willingness, deliver my testimony on oath; but if my examination is to extend to any other matters, I must decline the oath.

Mr. Pitt. It is not in your power, nor is it in ours. Mr. Parkinson, to make such a distinction. You are here to answer certain questions respecting *matters of the highest importance to the state*, in which any reservation on your part will at least be highly improper.

Mr. Atty. Gen. Consider, Sir, you are now before the *highest court* in this kingdom.

A. If I thought your Lordships would confine your interrogatories to the business of the *pretended plot*, I should be ready to take the oath directly.

Mr. Pitt. Then I will tell you, Mr. Parkinson, that the business on which you were required to attend is that of Mr. Upton's; but your own good sense will tell you that in the performance of our duty, we cannot engage to confine our questions to any specific matter; since that may arise, in your answers, which may render it necessary to put such questions as may not appear to apply immediately to that business.

A. Well, my Lords, as it is on the business of Upton on which I am to be examined, I am ready to take the oath, your Lordships allowing me to object to certain questions.

Aye, aye, very well, very well, was heard from every part of the table. The Attorney General saying in a very low tone of voice, 'You will not be asked to criminate yourself.' To which I answered in the same tone, 'There is no question you can put can produce an answer to criminate me.'

The oath being administered, after some unimportant questions, Mr. Pitt asked, Do you know Smith?

A. I do.

Mr. Pitt. How long have you known him?

A. I believe about two years. I was proceeding, when Mr. Pitt said, Speak slower, Mr. Parkinson, so that the clerk may take down your words.

A. If you please, Sir. But I think I could suggest a better mode of examination to their Lordships.

Mr. Pitt. Ha! What—what is that?

A. That your Lordships will allow me to give you an uninterrupted detail of what I know, subject to your subsequent examination. I am sure it will save both your Lordships and myself much time and trouble.

Mr. Pitt. Very proper, Sir; we shall be much obliged to you.

All their Lordships assenting, I proceeded to inform them of what had come to my knowledge, in nearly these words.

* * * * * * * *

Mr. Atty. Gen. When did you see Hodgson?

A. Last night.

Q. Where did you see him?

Mr. Pitt. What do you mean, Sir, you must answer the question?

A. This question, any more than many others I have already answered, can have no reference to the pretended plot.

Mr. Pitt. That does not signify; you are bound by the oath you have taken to answer it. To Mr. Fawkener. Read the oath. (The oath read.)

Mr. Atty. Gen. You perceive, Sir, you have sworn to true answer make to such questions as shall be put to you respecting certain matters before this board.

A. But it was surely agreed that I was to object to certain questions.

Mr. Atty. Gen. Yes, to such as might criminate yourself, and to those only.

Mr. Pitt (with great petulancy). Repeat the question and take down his answer.

Mr. Atty. Gen. Choose whether you will answer the question, or take the consequences of a refusal.

Mr. Pitt. Aye! Aye!

Mr. Atty. Gen. Now, Sir, where did you see Hodgson?

A. I wish not to behave with incivility towards your Lordships. But I must say, and that not without considering my answer, that I am used exceedingly ill.

Mr. Pitt. What can you mean, Sir; by whom?

A. By this Board. My Lords, I understood I was to be interrogated respecting one particular matter, and the question now put can have no reference to it.

Mr. Pitt. Sir, you cannot object to this question?

A. I conceive that I *can*, and *do* on this ground also—that you ought not to put such questions, the refusing to answer which will imply crimination.

Mr. Atty. Gen. Sir, you must answer the question.

One of their Lordships. Unless it will criminate yourself.

A. My Lords, my legal knowledge is but very trifling; it chiefly consists in knowing what was crime a few years ago; but from the extraordinary circumstances I have lately observed, I know not what may be now deemed crime or not. On that ground also I object to answering this question.

Mr. Atty. Gen. Then, Sir, you know that a bill was found yesterday, for High Treason against Hodgson, by a Grand Jury of his countrymen?

A. I learned so from the public papers, and indeed, from himself.

Mr. Atty. Gen. Now, Sir, if after that you conceal him, you are guilty of Misprision of Treason.

A. That, Sir, I am aware of.

Mr. Atty. Gen. Now, Sir, answer the question; but you are not wished to criminate yourself.

A. Then, I saw him *in my own house.*

Mr. Atty. Gen. At what time?

A. About eleven in the evening.

Q. What did he come about?

A. Nothing particular; he laughingly told me of the bill found against him.

Q. At that time of night—you think that was late, don't you?

A. No.

Q. Why, he did not come to you in the way of your profession, did he?

A. No.

Q. Why, do you have visitors even at that late hour?

A. Yes, often my Lords, I sit up late.

Q. How long did he stay?

A. About ten minutes.

Q. What place had he been at last before you saw him?

A. Must I answer that question?

Mr. Atty. Gen. Yes, certainly.

A. At a public house.

Q. Where, there are many public houses?

A. In Shoreditch.

Q. Whereabouts, Shoreditch is a large place, is it not?

A. Near the church.

Q. Near the church, Sir; but what sign was it?

A. Am not quite sure; it was a public-house facing the church.

Q. Why, is there more than one?

A. Yes.

Mr. Pitt. What sign do you suppose it was, Mr. Parkinson?

A. I think it must have been either the King's Arms, or the Star and Garter. (Here Mr. Pitt wrote down a few words on a slip of paper, and carried them out of the room.)

Q. Do you know where he is now?

A. No.

Q. Do you know where we can find him?

A. No.

* * * * * * * *

Q. Pray, Sir, did you ever see one of these pamphlets? (*The Vindication of the London Corresponding Society.*)

A. Yes, my Lords.

Q. Do you know the author?

A. Exceedingly well.

Q. Who is the author?

A. I object to the question.

Q. You cannot object to it unless it will criminate yourself. —Who is the author?

A. I object to the question.

(One of their Lordships to Mr. Fawkener.—Put down—Refuses to answer, *because* it will criminate himself.)

Irritated by this attempt to foist the words of another into my examination, I struck my hand on the table and said,—My Lords, I claim that no words be inserted in my examination as my answers but what proceeds from my own lips—I gave no such reason.

(Another of their Lordships. Only put down refuses to answer this question.)

A. The question, my Lords, is not in itself worth contention. If put again I will answer it.

Q. Who is the author?

A. I am the author.

Q. You are the author?

A. I am the author.

Q. And pray, was this intended to be published before the trials?

A. It was.—But on its being suggested, I believed by myself, that it might be not proper, it was resolved it should not, the press was therefore stopped.

Q. How many were printed then?

A. Only two hundred and fifty.

Q. How many had been intended?

A. I think two thousand.

This letter also shows that Parkinson wrote to the Privy Council in behalf of one of the accused, John Smith, who had been thrown into Newgate prison on the treason side, and who though ill at the time was left exposed to wet and cold in a most atrocious manner and consequently became seriously ill. As a result of Parkinson's intervention, Smith was moved into more tolerable apartments and was given medical attendance.

Though an agitator and reformer, Parkinson found great fascination in geology and even more particularly in the study of paleontology and oryctology. Little was known of these sciences in England at that time, but he entered this field with keen interest and enthusiasm. He became one of the original

members of the London Geological Society, his attention being chiefly centered in the study of the organic remains of former ages as they existed in the various strata in and around London. He was an enthusiastic student and collector. His collection grew and became famous, and he contributed numerous articles to the leading scientific journals. His knowledge of and interest in these subjects is shown in his important work entitled "Organic Remains of a Former World." This consists of three large volumes, which it took him several years to prepare, the first volume appearing in 1804, the second in 1808, and the third in 1811.

In 1822 he published "Outlines of Oryctology," or an introduction to the study of fossil organic remains. This is a book of 340 pages which served for some time as a text book. It passed through three editions. From a study of the title page we see that Parkinson was a member not only of national but of foreign geological societies.

The importance of his contributions to geology, paleontology and oryctology is proven by citations from the writings of one of England's greatest paleontologists who wrote half a century later. In 1850 Mantell published "A Pictorial Atlas of Fossil Remains," which consisted of illustrations selected chiefly, he tells us, from Parkinson's "Organic Remains of a Former World." In the introduction Mantell says:

> The publication of Mr. Parkinson's 'Organic Remains of a Former World' at the commencement of the present century must be regarded as a memorable event in the history of British paleontology. It was the first attempt to give a familiar and scientific account of fossil relics of animals and plants accompanied by the figures of the specimens described.
>
> The three volumes of which the work consisted appeared at considerable intervals; the last was published in 1811, although nearly forty years have since elapsed and hundreds of geological works of all kinds and degrees of merit have subsequently been issued, Mr. Parkinson's plates, owing to their fidelity and beauty, are still in such request as to induce the proprietor, Mr. Bohn, now that the work is out of print, to publish them, with the descriptions and modern names of the fossils represented.

Chemistry also proved an attraction to him and he seems to have foreseen its wonderful possibilities in relation to scientific medicine. He studied chemistry for its own sake as well as for its application to medicine. The results of his study took tangible form and appeared in a little book entitled "The Chemical Pocket-book"[2] which represented the inorganic and physiological chemistry of that day.

His remarks on caloric are of interest, as showing how intelligent and well informed he was for his time. He says:

> Heat, with the various changes produced by it in bodies, is considered by some, as merely the consequence of certain mechanical changes in bodies, but it is most generally supposed that these effects depend on a certain matter called caloric or the matter of heat.
>
> Caloric appears to be an highly elastic imponderable fluid, and is so very subtle, that neither has its gravity been yet ascertained, nor its existence, in a simple and uncombined state been shown. It combines chemically with all bodies, in a quantity proportioned to their affinity with it. By its elastic power it constantly tends to separate the particles of matter in which it is opposed by the attraction of cohesion, hence attraction of cohesion predominating the body exists in a solid form, caloric existing in such a proportion as to weaken the attraction of cohesion to a certain degree, the body assumes a liquid form, and when the quantity of caloric is increased still further, the body takes a gaseous form.
>
> It constantly tends to form an equilibrium, by passing from bodies of an higher, and diffusing itself through bodies of a lower temperature.
>
> * * * * * * * *
>
> Count Rumford, from the great quantity of heat produced by friction, is induced to ask, What is heat? Is there any such thing as the aqueous fluid? Is there anything that can with propriety be called caloric? He observes the source of heat generated by friction appears evidently to be inexhaustible, and adds, that anything which any insolated body, or system of bodies can continue to furnish without limitation, cannot possibly be a material substance.
>
> Heat, Mr. Davy says, or that power which prevents the actual contact of the corpuscles of bodies, and which is the cause of our peculiar sensations of heat and cold, may be defined as a peculiar motion, probably a vibration of the corpuscles, tending to separate them. It may with propriety be called the Repulsive Motion. The non-existence of caloric or fluid of heat, he thinks his experiments have proved.
>
> Dr. Beddoes is also of the opinion that most of the phenomena relative to heat, are more readily reconcilable to the mechanical rather than to the chemical doctrine of heat.

In this chemistry he describes the character of the elements, their compounds, etc., in the ordinary text-book style; and the last thirty pages are devoted to the physiological chemistry of "Animal Substances," such as the blood, gastric and other internal juices, and secretions of the body, bones, teeth, shells, eggs and feathers of birds, etc., etc.

The small volume was apparently very popular, for it ran through several English and American editions.

An entirely different side of his life is revealed in a book entitled "*Dangerous Sports*[3]—a tale addressed to children warning them against wanton, careless or mischievous exposure to situations from which alarming injuries so often proceed." This to the writer appears as the most peculiar of

[2] *The Chemical Pocket-book; or Memoranda Chemica;* arranged in a Compendium of Chemistry, with tables of attractions, etc. Calculated as well for the occasional reference of the professional student as to supply others with a general knowledge of chemistry, by James Parkinson, with the latest discoveries, from the London second edition of 1801, to which is now added An Appendix containing the principal objections to the antiphlogistic system of chemistry, by James Woodhouse, M. D., professor of chemistry in the University of Pennsylvania, etc. Philadelphia. Printed and sold by James Humphreys, at the N. W. corner of Walnut and Dock St., 1802. First American edition, 1799. On its last page is the following announcement:

Dr. Woodhouse's Lectures on Chemistry commence on the first Tuesday in November of every year, in the city of Philadelphia, and end on the last day of February.

He possesses a complete chemical apparatus, and during the course, several thousand brilliant experiments are exhibited.

Specimens of the various earths, salts, ores of metals, etc., are shown to the class.

[3] The first edition was published in 1800, the second in 1808.

all his writings. The title might better have been "Don'ts for Children." The advice consists of a succession of "don'ts," frequently repeated, with examples appended of disastrous results accruing from a failure in the past to observe the cautions and precautions laid down by the story-teller.

The reader is introduced to an old cripple called Millson who finds a child terribly hurt from an accident which occurred as a result of boys throwing stones at the horse upon which the child had been riding. Millson looks after the child and returns him to his home, for which he enjoys the gratitude of both the child and parents. The writer then warns boys never to scare a horse or to throw stones at one, particularly when anyone is riding it. He also warns children not to strike strange dogs and tells them how best to meet an attack of a ferocious dog.

The next part in which he represents a house-party for children to which old Millson is invited is still more peculiar. Old Millson appoints himself professor of sport and undertakes to teach the children how to play without exposing themselves to danger and how they ought to enjoy themselves by learning something of electricity or by magic lantern pictures, etc.

The plan of teaching is as follows: One of the party does something which exposes someone to danger, whereupon old Millson calls them all together and then relates the incident, drawing morals for them. Next he tells them a story of a similar action with a very disastrous ending and then tells them not to do it again.

The subjects with which old Millson deals include all the things which add spice to the life of a child. He advises the boys never to stand too close to the batter in a cricket game, never to climb trees or rob birds' nests, never to risk life or limb in playing stump or follow the leader, never to throw stones or go swimming in deep water, never to go out on thin ice, or to play with pistols or even with bow and arrows, never to close a penknife against the thigh, to taste unknown substances or to cut the end off of a cripple's crutch, etc. Intended to entertain children, one can imagine how they must have enjoyed it! The book doubtlessly found more favor among parents. Certainly the advice contained in it would never develop the best part of a boy's nature, and if accepted would certainly rob the world of all its Tom Sawyers.

The son of a doctor, reared in the home of a practicing physician, Parkinson entered the profession with a full knowledge of what the practice of medicine meant and of the nature of the life of a general practitioner. In his early life he studied shorthand, which proved later of great service to him in the course of his studies. After graduation he still continued to be a student, taking courses in those branches which particularly appealed to him, for he was ambitious. A careful student of the philosophy and progress of his age, a trained thinker, he did not accept as truth anything lacking in scientific proof, entering into many arguments and controversies with his contemporaries.

The fact that he was a fellow of the Royal College of Surgeons stamps him as a man of learning and of standing in the profession; while the large number of his publications bears witness to his industry.

A most peculiar side of his nature is revealed in the publication of medical books for the laity which somewhat resemble the household medical books or home practitioners of today. It is difficult to understand why he wrote them. The prefaces and introductory remarks pretend to convey his reasons to the reader but these impress one as being exceedingly apologetic in nature, as though the author felt some compunction concerning the publication of these works and found it difficult to convince himself by arguments that it was absolutely proper and advisable that he should publish them. Whatever his feelings were, the books did appear.

Hints for the Improvement of Trusses[4] is a pamphlet of twenty-two pages. The author offers some original ideas as to home methods that may be used to keep a hernia in place. He gives as his reason for writing this book that he does not believe in exclusive patents and wants to make the idea widespread for general use by the poor.

> Possessing these sentiments respecting the reservation of exclusive property, in those discoveries which conduce to the preservation of life, and the diminution of disease, it was sufficient to believe it possible, that the present little improvement might, eventually, prove beneficial, to produce such a publication of its description, as might prevent anyone assuming the principle as their discovery, for the purpose of obtaining an exclusive patent. By stating this, however, it is not meant to arrogate the merit of a very important discovery, it is merely offered as a hint, which may probably suggest means of relief, easy of acquisition, in a disease in which, if these or similar means be omitted, a fatal termination may be expected to occur. A hope is also entertained that the principle, capable of being further extended, may, under the attention of the ingenious mechanic, or even of the patient himself, be so modified, as to be applied to the construction of an instrument, still more simple and more efficacious than any which have been, as yet, adopted.

The occasion for the appearance of a book entitled "Mad Houses"[5] was a series of attacks by newspapers and by one "short-lived medical newspaper" against him for his seeming neglect before signing the papers which committed Mary Daintree to confinement for insanity. In this pamphlet of thirty-eight pages he discusses first, the laws for confinement, then shows their weak points and suggests ways of remedying their shortcomings.

> The miseries of any one unnecessarily consigned to the horrors of a mad-house, and the state of the unhappy lunatic, whose

[4] Hints for the Improvement of Trusses intended to Render their Use less inconvenient and to Prevent the Necessity of an understrap, with the Description of a Truss of Easy Construction and Slight Expense for the Use of the Labouring Poor, to whom this little tract is chiefly addressed. By James Parkinson. Hoxton. Price nine pence. 1802.

[5] Mad Houses. Observations on the act regulating mad-houses and a correction of the statements of the case of Benjamin Elliott, convicted of illegally confining Mary Daintree, with remarks addressed to the friends of insane persons. By Jas. Parkinson. 1811.

privation of reason leaves him without the power of complaint against those, who, false to their trust, may augment instead of diminish his sufferings, alike excite our commiseration. We cannot, therefore, but look with gratitude to the labours of those who brought forward that act, the objects of which are, the regulation of mad-houses, the admission of patients, and the visitation of these houses and patients by proper persons.

But here, as in many other instances, the first endeavors of benevolence have not been fully successful. Although the grand points, which the authors of the bill had in view, are in a great measure obtained, other less evils remain unabated, and some exist which are the consequence of imperfections in the bill itself. To point out these evils, and to endeavor to trace them to their true source, and to suggest means by which they may be removed or lessened, are the objects of the present attempt.

In the last ten pages he goes over his evidence given at the trial of relations who were instrumental in the commitment of Mary Daintree, confined for three months in a madhouse, from which it would appear that he had fully done his duty and that he was justified in signing the bill of commitment. It appears that his evidence was wrongly quoted in the newspaper and as he did not take the trouble to correct this paper it was quoted by other papers and severe criticism had been passed on his conduct in the affair.

Parkinson states in the trial that he is visiting surgeon of the madhouse. This publication appeared two months after the trial and was sold to the public for two shillings.

Probably the most interesting part of his book entitled "Medical Admonitions"[6] is the introduction to the table of symptoms, in which the author outlines his position and offers a reason for undertaking the publication of a book on medicine intended for circulation and use among the laity. He says:

Should any one obstinately put to sea without a compass to steer by and without any knowledge respecting the navigation of a ship, but what he picks up during his voyage, by reference to some treatise on navigation, it would not be sufficient, merely to endeavor to dissuade him from making the rash attempt. But if he persist, every profitable assistance should be yielded him, the perils he has to shun should be clearly pointed out, the different rocks and quicksands he is to avoid should be marked, and the different circumstances should be described which may show his near approach to danger. With a similar intention is the following table given.

Then follows a list which includes every conceivable symptom, what the purport of these symptoms may be and suggestions as to the seriousness of the case. This occupies some forty-three pages.

This book like so many of the Home Practitioners is a brief, concise picture of different diseases, with an outline of treatment, and a statement as to the gravity, etc. It comprises about 500 pages and deals with nearly all the recognized medical diseases.

In "The Villagers' Friend"[7] he represents himself as an old practitioner who has been the village apothecary for thirty years, during which time he has labored long and hard and has received little in return, and now in his old age he is poored than when he started practice. He is leaving practice to devote the remainder of his days to some rustic employment. In parting he advises his old friends and patients. The reader is reminded of how little the public has considered the comfort or pleasure of its physician, of the nights spent in buffeting stormy elements in response to urgent calls for which no necessity existed, and he tries to inculcate some consideration on the part of the reader for the comfort and well being of the physician of the future. He deals with the value of exercise as a therapeutic measure, warns against the dangers of drink, advises thrift but not overwork. Bathing is advocated as a prophylactic measure, but not a cure for disease, for he is afraid of its employment during the course of disease.

Throughout this volume the Friend delights to use proverbs and Parkinson here really appears as a medical Sancho Panza. The book was very highly recommended by the press in general and by several medical journals, for example, the Medical and Physical Journal, The London Medical Review and Magazine, and Medical and Chirurgical Review.

Our greatest interest, however, is centered in his contributions to medicine itself. What did he do that appealed to the profession? What did he contribute to medical science?

Gout in his day was the same difficult but attractive problem that it is today. It was known to be in some way associated with uric acid. It appealed from the chemical side to him and also from the side of treatment probably, as he himself was a sufferer from this disease.

Parkinson had some ideas concerning gout, its cause and treatment, and he was very definite about them. Another gentleman, Dr. Kinglake, equally confident also had ideas on this subject and had written a large book on the subject. Parkinson's ideas, however, did not exactly coincide with those of Kinglake, so that gout furnished then, as it can now, an excellent subject for a controversy.

In 1805 his book entitled "Observations on the Nature and Cure of Gout"[8] appeared. Parkinson states in the preface that he had frequently felt urged to write on this disease, from which he himself had suffered so greatly, but for various reasons he had not done so. "But the perusal of Dr. King-

[6] Medical admonitions to families respecting the preservation of health and the treatment of the sick. Also a Table of Symptoms serving to point out the degree of danger and to distinguish one disease from another, with observations respecting the improper indulgence of children. By James Parkinson, M. D. Hoxton. First American from the fourth English edition. 1803.

There were five editions of this work published between 1799 and 1809.

The volume that I was privileged to see was from the library of Dr. Pierre Chatard and was the gift of Dr. Ferdinand E. Chatard to the library of the Johns Hopkins Hospital.

[7] The Villager's Friend and Physician, or a familiar address on the preservation of health, and the removal of disease, on its first appearance; supposed to be delivered by a village apothecary; with cursory observations on the treatment of children, on sobriety, industry, etc., intended for the promotion of domestic happiness. By James Parkinson. 1800. Small volume of 85 pages. Cost 1 shilling.

[8] Observations on the nature and cure of gout, etc. 8°. London. N. D. Symonds, 1805.

lake's 'Dissertation on Gout'[9] determined my intentions. Strongly suspecting that the advice delivered in that work, with so much benevolence and zeal, must in many instances prove highly injurious, and believing that the observations which I had made might serve to prevent too general an adoption of that advice, I resolved on their publication."

It is interesting to note that he advises against the use of the Duke of Portland powder and quotes Cadagon who says, "I myself observed between fifty and sixty of its advocates, some my patients, some my acquaintances or neighbors, who were apparently cured by it, but in less than six years' time '*omnes ad internecionem casi*,' they all died to a man." He also quotes Cullen who said that in every instance which he had known of the exhibition of this medicine for the length of time prescribed, the persons who had taken it were indeed afterwards free from any inflammatory affection of the joints, but they were affected with many symptoms of the atonic gout, and all, soon after finishing their course of the medicine, have been attacked with apoplexy, asthma or dropsy, which proved fatal. He strongly criticises Dr. Kinglake's writings and states that application of cold produces irregular or retrocedent gout (in the viscera), which is more to be dreaded than joint gout. Indeed in the irregular form of gout fermented liquors were administered in order to increase it to such an extent that the joints would become affected and the disease become localized and leave the internal viscera free.

In one part he refers to the observation of Heberden." "The doctor speaks of these tumors, as existing only on the third joints of the fingers which may be accounted from the circumstance of their almost always making their first appearance on these joints, some months and even sometimes years elapsing before they appear on the second series of joints. Although it is undoubtedly a fact, that they are often to be found on those persons to whom gout is unknown, yet they often exist where gout has manifested itself, in some slight attack, at some former period." Parkinson also says they may be painful. He evidently does not distinguish between gout and arthritis deformans or hypertrophic arthritis, for he says that "the disease noticed by Dr. Heberden is the same to which this chapter is devoted."

Two years following the appearance of Parkinson's book on gout, Kinglake retaliates with another pamphlet."

In the preface Kinglake states that the contents of this work were originally intended for another volume which was a reply to the hosts of criticisms mostly anonymous, but "Mr. Parkinson's manly and open criticism was worthy of separate reply."

Each part of Mr. Parkinson's book which deals with fundamental principles, of the cause and treatment of gout, is taken up and discussed.

Mr. Kinglake does not agree with the chemical theory but he speaks of "its practical importance, were it capable of being established." He becomes sarcastic, "but it would seem that the respective discoveries of Scheele, Forbes, Pearson, Fourcroy and Wollaston attracted the admiration of Mr. Parkinson, and induced him to meditate the fabrication of a theory of gout, more chemical, more scientific, more worthy the suffrages of the learned world, and perhaps more politic, too, than any view of the disease possibly could be, that would authorize the topical use of cold water." He scores heavily on Parkinson who thinks that wine and punch, not beer and malt, are the greatest exciting etiological factors, when he observes that he has found gout more prevalent in those who from habit or preference use malt liquor for common beverage.[12]

Kinglake criticises very strongly the interpretation placed on observations made by Parkinson, ridicules his array of cases in which the harmful effect of the application of cold are detailed (only one of which was treated with cold and here the result was good and the symptoms appearing a year later cannot possibly be the result of the treatment given). "Less integrity and more art might have given them a more imposing appearance, but Mr. Parkinson's regard for truth has conferred on them no more than their real value."

He ends by complimenting Parkinson on his book. "It would be tacit detraction in me to terminate my strictures on Mr. Parkinson's work, without acknowledging it to be on the whole a medical performance of the first class of respectability. Although indeed, it is not in my power to assent to the hypothesis it contains, it is but just to say, that like the author's other publications, it at once abounds with proof of reputable talent and of an amiable disposition to benefit mankind."

The library of the British Museum contains a small work entitled "Observations on Dr. Hugh Smith's Philosophy of Physic." This was published in 1780, and has always been ascribed to Parkinson. On the fly leaf is written "From the author with his most respectful compliments." The "Observations" are addressed to Hugh Smith, M. D. of Hutton Street. "These observations, Sir, are dedicated to you, with that earnestness, which the subject demands, that deference, which is due you, and that diffidence, which ought to accompany an opposition to opinions, which are said to be founded on experiments and confirmed by physiological researching and the closest method of reasoning."

"By their fruits ye shall know them." Although written anonymously, this is almost certainly Parkinson's work. The method of presenting the subject matter, the arguments themselves, and the style of speech are strikingly suggestive. The preface and introduction, full of compliments and praise for Dr. Smith and the unsparing attacks on Smith's work itself,

[9] A dissertation on gout, etc. 8°. London. J. Murray. 1804.

[10] Commentarii de morborum historia et curatione. 8°. London. T. Payne. 1804.

[11] Strictures on Mr. Parkinson's observations on the nature and cure of gout, recently published in opposition to the theory, that proposes the cooling treatment of that disease: to which are added in an appendix two letters addressed to Dr. Haggarth, containing remarks on the opinions he has lately published, on acute rheumatism, the use of cinchona or Peruvian bark in that disease, and on what he terms "nodosity of the joints." 8°. Taunton. J. Poole. 1807.

[12] In treatment Parkinson advises the total avoidance of fermented liquors except in atonic gout.

have their analogue in Mr. Parkinson's attitude toward Kinglake in "Observations on the Nature and Cure of Gout."

The first chapter is devoted to refuting Smith's definition of a gland and to a discussion of so-called "Vital Air," which according to him is responsible for the circulation of the blood. Parkinson can see no difference between ordinary air and vital air and denies that it has anything to do with circulating the blood.

He shows that Dr. Smith has gone at great length into a contraversion of Boerhaave's theory of circulation which, Parkinson says, for thirty years has not been accepted by leaders in medicine. Smith had attacked it as though it still was standing and gave no credit to Cullen and others who had refuted it in part. Parkinson recalls all this and then discusses some of Smith's criticisms which he says have not attacked the theory in its assailable parts but in the parts where it stands firm and is still accepted. He says also that Smith has not interpreted Boerhaave properly. Smith claimed that he had experimental proof that heating of air in fluid in close confinement in tubes caused circulation. Parkinson asks him for demonstrations or for records of such experimental proof.

In observations of the second chapter of "Philosophical Inquiries" it is shown that Boerhaave claimed that "the air by distending the vesicles of the bronchi compresses the veins in inspiration and hence the air cannot, at this time, gain entrance into the pulmonary veins."

Smith claimed that "the power of any given quantity of air is abated in proportion as it is divided and subdivided into parts that are asunder from each other," and that "the innumerable cells of the bronchi seem admirably contrived by the author of nature to prevent this compression."

Parkinson says that this idea is false, as air in subdivision is exposed to a much greater heating surface and consequently expands more rapidly and exerts more compression than if it were not distributed to the various vesicles and alveoli.

He also rejects on physical grounds Smith's idea that a cutaneous respiration exists—Smith claiming that the vital air is increased by heavier air entering through the skin and lighter air and excrementous fluids passing out through it at one and the same time.

The "Hunterian Reminiscences"[12] are doubly interesting because they reveal the opinion of Parkinson concerning Hunter and furnish us with a full set of Hunter's lecture notes.

PREFACE.—To those gentlemen who have been instrumental, by their solicitations, to the production of this work, and who are aware of the motives which induced the editor to present it to his medical brethren, any preface or introduction may appear uncalled for, if not superfluous. But by those who have the good fortune to be now commencing the study of their profession under the direction of the enlightened professors of the present day, not only in every branch of medicine, but in every science associated with it, a few prefatory observations may be deemed requisite; for to them the necessity or utility of publishing the substance of lectures delivered half a century ago may not be apparent.

Nor is the absolute necessity or utility contended for: no more would it be necessary to examine the foundation of a building, every part of whose superstructure bespeaks its stability; yet it is pleasing, nay, highly interesting, occasionally to descend from the height to which modern surgery has attained, and carefully retrace each step, until we arrive at the very base on which it rests, every stone of which may be said to be inscribed with the name of John Hunter, for not only did he supply the materials, and work them with his own hands; but, if proof were wanting of how much he left wherewith to adorn the superstructure, let us visit the far-famed Hunterian Museum, where we may take our stand, and exaltingly exclaim 'Si monumentum quaeras, circumspice.

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With all its faults, for many of which the Editor holds himself personally accountable, he trusts the work will, in some measure, supply the loss which surgical science has sustained by the destruction (by accident it is to be hoped) of the original notes from which Mr. Hunter lectured. With this view alone does he deliver it into the hands of a learned and liberal profession, to be dealt with according to its merits.

In 1817 he wrote his "Essay on Shaking Palsy."[13] This constitutes his greatest and most important contribution to medicine. It alone is responsible for the handing down of his name to posterity and without it, his name would have died with him.

In the preface he states:

The disease, respecting which the present inquiry is made, is of a nature highly afflictive. Notwithstanding which, it has not yet obtained a place among nosologists; some have regarded its characteristic symptoms as distinct and different diseases, and others have given its name to diseases differing essentially from it; whilst the unhappy sufferer has considered it an evil, from the domination of which he had no prospect of escape.

The disease is of long duration: to connect, therefore, the symptoms which occur in its later stages with those which mark its commencement, requires a continuance of observation of the same case, or at least a correct history of its symptoms, even for several years. Of both of these advantages the writer has had the opportunity of availing himself; and has hence been led particularly to observe several other cases in which the disease existed in different stages of its progress.

His definition of the disease is as follows:

Involuntary tremulous motion, with lessened muscular power, in parts not in action and even when supported; with a propensity to bend the trunk forwards, and to pass from a walking to a running pace: the senses and intellects being uninjured.

He credits Galen with having distinguished two forms of tremor, one which occurs during attempts at movement, and the other while the parts are at rest, to the latter of which the term palpitation was applied. Sylvius de la Boë, Juncker, Cullen and Sauvages are also credited with distinguishing

[12] Hunterian Reminiscences being the Substance of a Course of Lectures on the Principles and Practice of Surgery delivered by the late Mr. John Hunter in the year 1785. Taken in shorthand and afterwards fairly transcribed by the late Mr. James Parkinson. Edited by his son, J. W. K. Parkinson, F. R. C. S., Lond.

[13] An essay on shaking palsy. 8°. London. Sherwood, Neely & Jones. 1817.

various forms of tremor. "Tremor has been adopted, as a genus, by almost every nosologist; but always unmarked in their several definitions, by such characters as would embrace this disease."

The following quotation is somewhat long but the description of the disease is so good that it should be better known by physicians, and we therefore venture to reprint it:

So slight and nearly imperceptible are the first inroads of this malady, and so extremely slow is its progress, that it rarely happens, that the patient can form any recollection of the precise period of its commencement. The first symptoms perceived are a slight sense of weakness, with a proneness to trembling in some particular part; sometimes in the head, but most commonly in one of the hands and arms. These symptoms gradually increase in the part first affected; and at an uncertain period, but seldom in less than twelve months or more, the morbid influence is felt in some other part. Thus assuming one of the hands and arms to be first attacked, the other, at this period becomes similarly affected. After a few months the patient is found to be less strict than usual in preserving an upright posture: this being most observable whilst walking, but sometimes whilst sitting or standing. Sometime after the appearance of this symptom, and during its slow increase, one of the legs is discovered slightly to tremble, and is also found to suffer fatigue sooner than the leg of the other side: and in a few months this limb becomes agitated by similar tremblings, and suffers a similar loss of power.

Hitherto the patient will have experienced but little inconvenience; and befriended by the strong influence of habitual endurance, would perhaps seldom think of his being the subject of disease, except when reminded of it by the unsteadiness of his hand, whilst writing or employing himself in any nicer kind of manipulation. But as the disease proceeds, similar employments are accomplished with considerable difficulty, the hand failing to answer with exactness to the dictates of the will. Walking becomes a task which canot be performed without considerable attention. The legs are not raised to that height, or with that promptitude which the will directs, so that the utmost care is necessary to prevent frequent falls.

At this period the patient experiences much inconvenience, which unhappily is found daily to increase. The submission of the limbs to the directions of the will can hardly ever be obtained in the performance of the most ordinary offices of life. The fingers cannot be disposed of in the proposed directions, and applied with certainty to any proposed point. As time and the disease proceed, difficulties increase: writing can now be hardly at all accomplished; and reading, from the tremulous motion, is accomplished with some difficulty. Whilst at meals the fork not being duly directed frequently fails to raise the morsel from the plate, which, when seized, is with much difficulty conveyed to the mouth. At this period the patient seldom experiences a suspension of the agitation of his limbs. Commencing, for instance in one arm, the wearisome agitation is borne until beyond sufferance, when by suddenly changing the posture it is for a time stopped in that limb, to commence, generally, in less than a minute in one of the legs, or in the arm of the other side. Harassed by this tormenting round, the patient has recourse to walking, a mode of exercise to which the sufferers from this malady are in general partial; owing to their attention being thereby somewhat diverted from their unpleasant feelings, by the care and exertion required to ensure its safe performance.

But as the malady proceeds, even this temporary mitigation of suffering from the agitation of the limbs is denied. The propensity to lean forward becomes invincible, and the patient is thereby forced to step on the toes and forepart of the feet, whilst the upper part of the body is thrown so far forward as to render it difficult to avoid falling on the face. In some cases, when this state of the malady is attained, the patient can no longer exercise himself by walking in his usual manner, but is thrown on the toes and forepart of the feet; being at the same time, irresistibly impelled to take much quicker and shorter steps, and thereby to adopt unwillingly a running pace. In some cases it is found necessary entirely to substitute running for walking; since otherwise the patient, on proceeding only a very few paces, would inevitably fall.

In this stage, the sleep becomes much disturbed. The tremulous motion of the limbs occur during sleep, and augment until they awaken the patient, and frequently with much agitation and alarm. The power of conveying the food to the mouth is at length so much impeded that he is obliged to consent to be fed by others. The bowels, which had been all along torpid, now, in most cases, demand stimulating medicines of very considerable power: the expulsion of the fæces from the rectum sometimes requiring mechanical aid. As the disease proceeds towards its last stage, the trunk is almost permanently bowed, the muscular power is more decidedly diminished, and the tremulous agitation becomes violent. The patient walks now with great difficulty, and unable any longer to support himself with his stick, he dares not venture on this exercise, unless assisted by an attendant, who walking backwards before him prevents his falling forwards, by the pressure of his hands against the forepart of his shoulders. His words are now scarcely intelligible; and he is not only no longer able to feed himself, but when the food is conveyed to the mouth, so much are the actions of the muscles of the tongue, pharynx, etc. impeded by the impaired action and perpetual agitation, that the food is with difficulty retained in the mouth until masticated; and then as difficultly swallowed. Now also, from the same cause, another very unpleasant circumstance occurs: the saliva fails of being directed to the back part of the fauces, and hence is continually draining from the mouth, mixed with the particles of food, which he is no longer able to clear from the inside of the mouth.

As the debility increases and the influence of the will over the muscles fades away, the tremulous agitation becomes more vehement. It now seldom leaves him for a moment; but even when exhausted nature seizes a small portion of sleep, the motion becomes so violent as not only to shake the bed-hangings, but even the floor and sashes of the room. The chin is now almost immovably bent down upon the sternum. The slops with which he is attempted to be fed, with the saliva, are continually trickling from the mouth. The power of articulation is lost. The urine and fæces are passed involuntarily; and at the last, constant sleepiness, with slight delirium, and other marks of extreme exhaustion announce the wished-for release.

Histories of six cases are given; the subject in each instance being a man of advanced age—in the five cases in which the age is mentioned the patient being above fifty years. Only two of the cases are absolutely typical, three others were only met with casually in the street, the opportunity of studying the objective features of the disease having been eagerly seized.

The attitude, the weakness, the tremor and the gait are accurately described, the rigidity is strongly suggested, particularly by one line, "the chin is now almost immovably bent down upon the sternum," while elsewhere the clumsiness and incoordination are more emphasized than is rigidity.

Nowhere in this essay is a description of the "mask" face—the so-called Parkinson face—encountered. It is possible that later he drew attention to the "mask" face but cer-

tainly no justification for the term "Parkinson's mask" can be found in his original essay.

Attention is called to the fact that the festinant gait (*scelotyrbe festinans*) had been previously noted and described by Carguet, by Gaubius and by Sauvages, although its association with the other symptoms in the symptom complex had not been recorded.

The question of differential diagnosis from other palsies, from anomalous forms of Jacksonian epilepsy, from hysteria, delirium tremens and tremors incident upon excessive use of tea, coffee and alcohol, is also considered.

In discussing the etiology he offers only apologies, as no autopsy had been made on any of the cases. He hesitatingly advances some conjectures and opinions which he admits are but sorry substitutes for facts, and points out that none of the symptoms of the disease are encountered in patients suffering from compression, laceration or complete division of the spinal cord. He thinks, however, that the seat of the disease is probably in the upper cord and extending as the disease progresses up into the medulla.

It is suggested that early treatment may be able to check the progress of the disease—bleeding, vesicatories and liniments and an issue (he is specific) one and one-quarter inches, at least, in length being advised. He assumes a hopeful attitude for such measures but thinks that internal remedies will be without avail.

The numerous citations from his writings disclose his style more adequately and much better than any description possibly could. One is often tempted to read on not so much because of the matter as because of the somewhat unusual and interesting method in which he reveals his ideas. He is verbacious and his sentences are complicated but readily understood. This peculiarity is common to all his writings.

Much can be surmised as to his personal character from a study of his varied writings. Certain characteristics stand out strongly, his love of controversy, his love of admonishing those about him, his love of freedom of speech and writing, and his deep interest in the various branches of science, as chemistry, geology and medicine. Fortunately all is not left to surmise. Mantell furnishes us with a description of his physical and social nature.

I gladly avail myself of this opportunity to make a passing allusion to the excellent and accomplished author, Mr. Parkinson. I had the pleasure and the privilege of his acquaintance in my youth, immediately after the publication of the third volume of his valuable work. Mr. Parkinson was rather below the middle stature, with an energetic, intelligent and pleasing expression of countenance and of mild and courteous manners; readily imparting information either on his favorite science or on professional subjects; for he was at that time actively engaged in medical practice in Hoxton Square and was the author of several valuable medical treatises. . . . "

. . . In after years Mr. Parkinson warmly encouraged my attempts to elucidate the nature of the strata and organic remains in my native county, Sussex, a district which was then supposed to be destitute of geological interest and he revised my drawings and favored me with his remarks on many subjects treated of in my first work.

He also speaks of the attractive style of Parkinson, in proof of which he quotes a whole chapter from one of Parkinson's books on geological subjects.

Parkinson died during his sixty-ninth year on December 21, 1824, in Kingsland Road and was buried on December 29, 1824. Until death he remained a parishioner of Hoxton and was buried in the parish burying grounds, the churchyard of St. Leonard's Shoreditch Church, the entry appearing in the parish register. In later years many of these graves were disturbed, the stones being lost. No stone bearing his name can be found in the old churchyard.

What then did Parkinson accomplish during his life? He cannot be considered a brilliant investigator and certainly he made no startling contributions to science. He was a man of the Old Master type described by Holmes rather than the highly specialized scarabaeist. Master of medicine, chemistry, geology, paleontology and oryctology, he was a writer of many textbooks, great as a compilator, keen in observation and desirous of seeing everything named and placed in its proper class. His most important contribution to medicine was the offspring of the last two qualities.

He was a member of the Geological Society of London, the Wernerine Society of Edinburgh, and of the Caesarean Society of Moscow, a Fellow of the Royal College of Surgeons.

'Tis true his chief contribution to medicine consisted simply in describing a disease and giving it a name, thereby establishing it as a clinical entity. It may be argued that he neither discovered its etiology nor found a cure; but the disease has stood an open challenge to investigators for a full century. "Let him that is without sin cast the first stone."

THE JOHNS HOPKINS HOSPITAL BULLETIN.

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IS THE ANASTOMOSIS BETWEEN THE PORTAL VEIN AND THE VENA CAVA COMPATIBLE WITH LIFE?

By B. M. Bernheim, M. D.,
Assistant in Surgery
and
Carl Voegtlin, Ph. D.,
Associate Professor of Pharmacology.

(From the Hunterian Laboratory of Experimental Medicine and the Department of Pharmacology, Johns Hopkins University.)

It has always been a difficult matter to cut an accurate opening between the portal vein and vena cava once they have been united side to side. Almost equally difficult has it been to control hemorrhage following the above procedure.

We communicated the method of doing this operation (Eck's fistula), not long ago, which gave excellent results in our own hands. The actual cutting of the fistula was fraught with a certain amount of danger because we used only an ordinary small eye-scissors. The control of bleeding following the cut, however, was beautifully and absolutely done by the mattress suture we suggested.

In order to do away with practically all danger in cutting the opening, we have lately devised a pair of scissors (Figs. 1 and 2), that are mathematical in the precision in which they cut and yet are so simple in their mechanism that any one can use them with perfect success. They are bayonet shaped, so that there is no difficulty or awkwardness in approaching the vessels which naturally lie quite deeply. The handles are four inches long, with a one and a half inch drop to the blades, whose actual cutting edge is 1 cm. There are two separate "stops," which allow the blades to be opened only a certain distance. When they are opened to their fullest extent, their points are exactly one-quarter of an inch apart and their outer edges are almost parallel—as nearly parallel as an instrument maker can make them and still keep the inner edge for cutting purposes. Furthermore the blades are wedge shaped, so as to prevent all bleeding while entering the vessels. Raised above the blades one-quarter of an inch and running parallel to them is a round guide which projects out beyond the blade points one-half inch and is turned up at its ends. It is attached to the shank of the scissors.

In addition to this improvement in our operation, the method of using which will be given a little later, we wish to tell of another aid which at first sight seems rather trivial, but is really of considerable significance and of great help. Where formerly we used single thread (Brainerd & Armstrong, size A or B), we now use double, threaded on the usual curved No. 3 French needle. The reason for this is that the double thread almost entirely fills the needle holes and is, of course, stronger.

The silk penetrates the lumen of both vessels at every stitch, but such a thing as a thrombus is practically unknown in this work. We remarked upon this phenomenon in our first paper, but were unable to explain it. A number of observations have been made since then, but no satisfactory explanation has been forthcoming.[1]

The steps of the operation then, as now done, are as follows:

A dog of almost any size, male or female, is kept on a restricted diet for about forty-eight hours to insure an empty intestinal canal. Having then been prepared for operation in the usual manner, the animal is etherized and the abdomen is opened in the mid-line in females, through the right rectus in males. With the intestines packed off to the left,[2] the portal vein and vena cava will be found lying very close to each other and running parallel for a considerable distance.

A provisional ligature of heavy silk is then placed around the portal vein in the space between its bifurcation at the hilus of the liver and the entrance into it of the vena pancreatico-duodenalis. This ligature, of course, is not tied until the conclusion of the anastomosis.

Following this, by blunt dissection the portal vein is cleared of peritoneum and all superfluous fat for a space of about an inch and a half. It is unnecessary to disturb the vena cava at all.

The left side of the vena cava is now united to the adjacent side of the portal vein, for a distance of about one inch (Fig. 3), by a continuous suture of double silk (Brainerd & Armstrong, size A), threated on a curved No. 3 French needle. The needle is passed through all the coats of both vessels, very little hemorrhage occurs, because the thread is of such size that it almost completely fills the needle holes. The slight bleeding which does take place is accurately controlled by gentle traction on the stitch previously placed. The suture is

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[1] To those who are familiar with the delicacy of the manipulations necessary to the success of a blood vessel anastomosis elsewhere in the body, this phenomenon is a most extraordinary occurrence. Thrombus formation in doing transfusion and arterio-venous anastomosis, or even a repair of a wounded vessel is the one thing that is to be most greatly feared by the surgeon, and all sorts of precautions are taken to avoid it. Yet here it seems that no precautions whatsoever are necessary because it almost never occurs, if the following precautions are taken. The animal should be put on a diet poor in calcium salts (meat) for several days previous to the operation and starved for 24 hours.

[2] It is of the utmost importance to leave the intestines in the abdominal cavity, so as to prevent any tension on the portal vein and consequently the tearing out of a stitch. The mattress suture especially is liable to cut out of the portal vein, if this precaution is not taken.

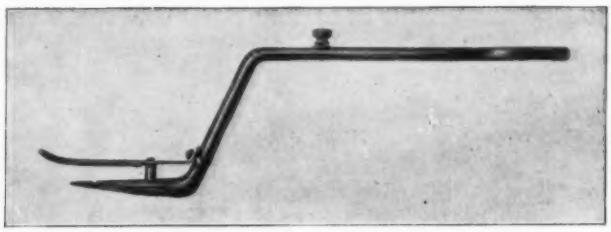

FIG. 1

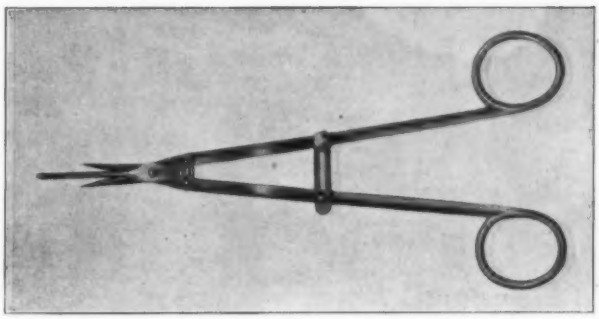

FIG. 2

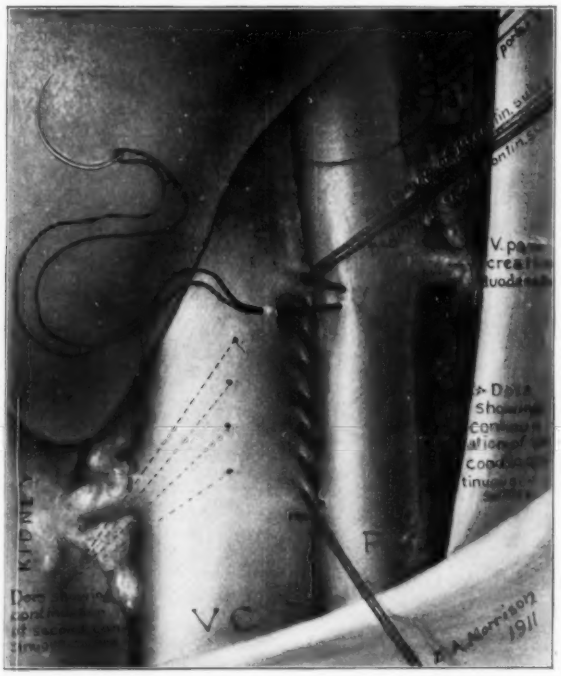

FIG. 3

FIG. 4

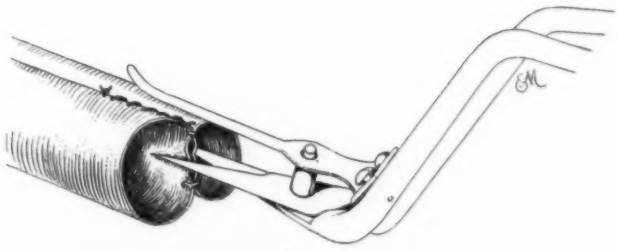

FIG. 5

started above and continued downwards, the ends being left long to be subsequently made use of as tractors.

Starting again at the top with another suture, just as in making a lateral anastomosis of the intestines, the portal vein is made to overlap the vena cava. This suture, also a continuous one, is brought down the outer sides of the vena cava and portal veins, parallel with the first suture—as indicated in the dots in Fig. 3—for a distance of about three-quarters of an inch, when it is tied, the ends being left long.

In the space between the lower ends of the two continuous sutures, a mattress suture is placed, having one arm in the portal vein and one in the vena cava (Fig. 4). Between the arms of this suture, which is left loose and untied the blades of the Eck fistula scissors are passed into the vessels, one entering the lumen of the portal and the other that of the vena cava. If now upward traction (that is at right angles to the vessels) is put upon the near end of the anterior continuous suture, and if the guide which is, of course outside the vessels is kept absolutely parallel to the upper row of sutures, the blades, being opened to their fullest extent, can be sent into the vessels up to the hilt (Fig. 5), without the slightest danger of cutting the upper or lower rows of sutures or of puncturing either vessel laterally. A cut exactly 1 cm. long is then deliberately made, and the scissors withdrawn, the forefinger of the operator or assistant being slipped over the external hole made in the vessel by the scissors and held there while the mattress suture, also of double silk, is tied. If this suture has been properly placed the hemorrhage will be accurately controlled. The ends of the mattress suture may be tied to the ends of the continuous sutures if additional security is desired, though this precaution is rarely necessary.

The anastomosis having thus been completed, the ligature, placed at the beginning of the operation around the portal vein at the hilus of the liver, is tied. The abdomen is then closed in layers, and following the usual custom of the Hunterian laboratory the wound is left without a dressing.

Since making use of the above mentioned scissors, we have not had a single fatality attributable to them, although we have done this operation in over 25 animals. About the only accidents we now have are those due to the misplacing of a stitch, the tearing out of a stitch or to some similar misfortune encountered during the actual anastomosis of the vessel, most of which, however, can be avoided by careful work.

I. Effect of Diet on General Behavior of Eck Fistula Dogs.

It was Eck's original intention to use his operation in the treatment of certain pathological conditions (especially abdominal ascites, due to cirrhosis of the liver). His method, however, was so unsafe that he did not venture to perform the operation on human beings. The well known researches of Pawlow and Nencki and their collaborators resulted in a great improvement of the tecnic of the operation, but at the same time it was found that animals (dogs), with an Eck fistula, if put on an exclusive meat diet, behaved quite differently from normal ones, in that they developed acute ammonium poisoning. These authors therefore concluded, that the liver normally takes care of and detoxifies the ammonium salts formed in the process of intestinal protein digestion. In the case of the Eck fistula animal the ammonium salts reach the general circulation and produce their typical toxic effects, before passing to the liver by way of the hepatic artery. As was natural, the likelihood of such an intoxication made the application of the Eck fistula operation to human beings an impossibility.

Hawk in a more recent research observed that beef extract (Liebig's) proved very injurious to Eck fistula dogs, whereas meat deprived of its extractives seemed to be harmless. To what constituent of the meat extract this toxic action is due, we are unable to say. From studies by Towles and Voegtlin, it seems that creatin, the most prominent organic constituent of meat extract, cannot play any rôle in this intoxication. Eck fistula dogs if kept on a diet of milk, though usually losing weight, will live for months as stated by many observers. In our own series of experiments (over 100 animals), we had an opportunity to confirm the statements of the Russian physiologists concerning the injurious effects of a pure meat diet.

We have made, however, the following observations. A great number of our Eck fistula animals, fed during several months on a meat diet to which bones had been added did not show any evidence of intoxication. We are unable to offer an entirely satisfactory explanation for this observation, unless we assume that the calcium phosphate of bone had some retarding influence on the rate of digestion, and consequently on the absorption of ammonium salts from the intestinal canal. The antagonistic action of calcium to ammonium salts, as observed by King and Voegtlin, may also have been the deciding factor in preventing the intoxication.[2]

We furthermore found, that on a mixed diet, consisting of milk, meat and bread, these dogs will live for a long time without showing any noticeable abnormalities. They gain in weight and are lively in appearance. The sexual functions are not impaired. The urine does not contain any abnormal constituents. We have kept several of these animals alive for more than ten months.

A careful study of the various hepatic functions in Eck fistula dogs disclosed the fact that although no qualitative changes could be determined, certain metabolic processes were found to be more or less depressed.

II. Carbohydrate Metabolism in Eck Fistula Dogs.

Popelski states that Eck fistula dogs show a lowered tolerance for glucose, *i. e.* alimentary glycosuria appears more readily if sugar is fed to such animals. de Filippi in a splendid research carefully studied this question in especial relation to the theory of Claude Bernard on the glycogenetic function of the liver. As is well known Bernard reached the conclusion that during digestion it is the liver which takes up all the sugar

[2] The intravenous injection of calcium chloride during the height of the intoxication did not exhibit any curative action. Guthrie states that he was unable to produce a toxæmia in Eck fistula cats by means of a meat diet.

brought to it by the portal circulation, that glycogen is formed and is mostly deposited in the liver cells, and is given up to other organs as they require it. Great stress has been laid on this function of the liver. It is the general belief that the liver is the regulating organ of carbohydrate metabolism, and that it prevents the accumulation of sugar in the blood (hyperglycæmia) and the appearance of sugar in the urine. It was de Filippi who was the first to call attention to the fact that an Eck fistula animal does not exhibit severe changes in carbohydrate metabolism; although its liver is practically excluded from the circulation (since the hepatic artery brings only a relatively small amount of blood to this organ). The sugar tolerance is only slightly decreased. This author therefore concludes that other organs may compensate the loss of liver function in regard to glycogenesis. He actually was able to demonstrate that the muscles of Eck fistula dogs in some cases contained more glycogen than those of normal control animals.

In our experience we could confirm the view expressed by de Filippi. With the exception of a few animals which were fed on large amounts of milk (800 cc. to dogs weighing 8 kgs.), no sugar could be detected in the urine. It seems, however, that lactose, levulose, saccharose, and glucose are less utilized by the Eck fistula dog, if introduced in relatively large quantities. These observations are important in connection with the clinical test for liver function described by H. Strauss and a few remarks as to the value of this test may not be superfluous. Strauss had observed that frogs with their livers extirpated showed a reduced tolerance for levulose. He therefore made use of this hexose to test hepatic function of patients with liver diseases. The results obtained seemed at first to indicate that the test was of some value, but later observers did not altogether corroborate the findings of Strauss. We believe that observations made on the frog, an animal so far removed from the human, cannot with any reason be transferred to the latter. From the work of de Filippi and our own observations on mammals, we are inclined to think that such a test could hardly prove successful, as there are great individual variations in the sugar tolerance, and also because a great reduction in liver tissue—three quarters—can take place before any abnormalities occur.

III. Bile Formation and Hemolytic Function of the Liver in Eck Fistula Dogs.

In a recent article, we have been able to prove the interesting fact that the formation of bile pigments and bile acids is very markedly decreased in the Eck fistula dog. The depression of this liver function occurs to such an extent that ligation of the common bile duct is not followed by obstructive jaundice, and only a negligible excretion of bile pigments and bile acids in the urine. We were led to believe from certain histological observations in connection with our work that some of the red blood corpuscles passing through the liver are taken up by the cells of this organ and are broken down, thus liberating hemoglobin. The latter substance gives rise to the formation of bile pigments. According to our experiments, the amount of bile pigments formed is dependent on the blood flow through the liver. In the case of the Eck fistula animal much less blood passes the capillary system of this organ and therefore fewer red blood corpuscles are brought into contact with the liver cells. It seems plausible that under these conditions a smaller number of erythrocytes are broken up. It may be emphasized that this reasoning is based on indirect evidence. The histologic picture of the livers of some of our animals showed that this organ was in a state of atrophy, which is explained by Whipple and Sperry by the insufficient blood supply of the liver cells under these conditions.

Dr. S. A. Matthews kindly informed us that he was able to corroborate these results on bile formation in every detail, and that he had direct proof of the remarkable decrease in bile formation after the operation for an Eck fistula, in that the flow of bile from a biliary fistula decreased very much up to practically complete cessation.

As a direct result of the reduction in bile secretion the feces of Eck fistula dogs on a milk diet appear fatty, whereas normal controls do not excrete any fat under these conditions. We are studying this point quantitatively at the present time.

Many interesting questions can be raised in regard to the fate of other bile constituents such as cholesterin, which as far as we know, is eliminated from the body with the bile and is transformed to dihydrocholesterin in the intestines and appears in the feces as such in relatively large amounts. In one of our Eck fistula dogs in which the common bile duct had been resected and which lived for more than ten months the path of excretion for cholesterin, namely, the bile duct, was blocked and yet the presence of this substance could not be demonstrated in the urine, nor in the feces. It seems to be especially worth while to consider this question, as we know that cholesterin plays an important part in certain immunity reactions (hemolysis by cobra venom). The recent work of Abel and Macht has demonstrated the most powerful digitalis action of an oxydative product of cholesterin found in the venom of the tropical toad *Bufo agua*. We hope to take up in the near future a study of the relation of cholesterin to hepatic function.

Clinical Application.

That the danger of intoxication by errors in diet is remote in the human being with an occluded portal circulation is shown by the following case reported by Schulz and Müller: These observers describe a patient with thrombosis of the portal vein near the liver hilus, in which there was complete obstruction. The patient came to the clinic suffering from severe ascites, but otherwise in good condition. The fluid was removed every two weeks during a year. The nutritional condition was perfectly normal, as shown by the weight. Superficial compensatory circulation was fully established. At autopsy no anastomosing vessels were found between the portal system and the liver.

At a recent session of the German Surgical Society, Bier reported that he had opened the abdomen of two patients suffering from cirrhosis of the liver with a view to anastomosing the portal vein, and the vena cava. In both instances the ad-

hesions were so dense around the hilus of the liver that the attempt had to be given up. Notwithstanding this, Bier, said, that when he got what he considered to be another suitable patient, he would try again to do an Eck fistula. Several surgeons, especially Vidal in France, and some in Italy, have had experiences similar to those of Bier. Indeed Vidal did actually perform the operation only to lose the patient three months later from an infection.

That the portal vein and vena cava will actually be successfully anastomosed in human beings in the near future is our firm conviction. The feasibility of the operation is beyond question. We have proved, we believe, that life is perfectly compatible with such a condition. In those suffering from cirrhosis of the liver, we believe, that an Eck fistula will give the relief that has been earnestly desired. It is only necessary to obtain a patient early enough in the course of the disease to carry out the various steps of the procedure. In such an individual the operation will be more easily performed than in the dog.

SUMMARY.

1. A new modification of the operation for Eck fistula is described which is superior as far as safety is concerned to the methods already known.

2. Eck fistula dogs if kept on a proper diet may live without being influenced by the operation for a long time.

3. Certain hepatic functions are decreased in Eck fistula animals: tolerance for sugars, formation of bile, hemolytic function of the liver.

4. Proof is furnished for the assumption that the application of the operation to the human being is perfectly compatible with life.

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SOME SUGGESTIONS REGARDING THE MECHANISM OF RESORPTION OF THYROID COLLOID.*

By PAUL G. WOOLLEY, M. D., Cincinnati, O.

If one examines the recent literature on the physiologic relation of the thyroid to the general economy, one finds that while there is some histologic evidence of resorption of the characteristic colloid, and much physiologic evidence of the same process, yet there is no, or practically no, reasonable explanation offered as to the method by which this resorption is accomplished. Thus, Hirsch [1] remarks that there is no doubt that a part of the product of the thyroid gland enters the circulation, *but that the method by which the colloidal contents of the follicles reach the lymph-spaces or blood-vessels is not yet known.*

In Hirsch's article the concept of Hürthle is quoted to the effect that the colloidal material enters the lymphatic circulation by means of intercellular passageways which unite the follicles with the general lymphatic system. This statement would lead to the embryologic conception that in reality the follicles are lymphatic, or to a histologic conception which has not yet been substantiated and which would mean that in the thyroid there is an anatomical arrangement which is contrary to the general rule that holds in all other organs. But whether this idea or the one that supposes the necessity for an *Einschmelzung* of the epithelium which allows of a breaking through of the colloid masses into the lymph-spaces is true or false, the ultimate proposition is helped not at all, for even in the lymph-spaces the colloid must be changed in order that it may be available for other cells, and for passage through the walls of the smallest capillaries. It would be of little importance, in the long run, whether this change occurred in the follicles of the thyroid or in the lymph-spaces or blood-vessels, and since there is no anatomical evidence of the colloid passing the follicle walls in the condition in which it exists in the follicles, it seems most reasonable to suspect that the necessary change in structure occurs within the follicles.

The substance which morphologists call the thyroid *colloid* is correctly so-called if we consider it from the standpoint of physico-chemical behavior. It is gelatinous, viscid and non-diffusible. It is this character of non-diffusibility which concerns us at this time, for were the thyroid colloid to remain non-diffusible, then it could have no physiologic value. But such colloid substances may be converted by various methods into the crystalloidal state without sacrificing their purely chemical nature. When they are so converted they become more fluid, non-viscid, and diffusible. Such a change, I believe, explains the migration of thyroid colloid material into the blood and lymph streams and from there into the various tissues and cells of the body.

*Read before the Cincinnati Society of Medical Research, October 5, 1911.

[1] Handbuch d. Biochemie d. Menschen u. d. Tiere, Bd. III, Hft. 1, S. 273.

As an example of reversibility in the state of a substance, I may merely mention the melting of gelatine, agar, or glue by the application of heat, and the transformation of glycogen into dextrose (accompanied in this case by the addition of a molecule of water to the carbohydrate molecule).

Substances brought to the thyroid by the blood stream in a diffusible condition are stored in a colloid state in the follicles, and later, when necessity arises or when, in disease, the chemical conditions are right, there follows a change that results in a transformation from the colloid to the crystalloidal state. By such a supposition we can dispense with theoretical anatomical variations, and can, most important of all, have at our disposal a working hypothesis that can be tested. We might therefore suspect that the præcolloid of Lewandowsky is the crystalloidal state of follicular colloid.

It might be suggested that in the process of resorption of the thyroid colloid we are dealing with an instance of the diffusion of a colloid through a colloid—of the passage of the thyroid colloid through the colloid walls of the follicles. But in this case we have no evidence of such a process. Certainly we see colloid in the alveoli, in the epithelial cells and in the lymph-spaces. But the colloid masses of the cells are evidently in the process of extension into the alveoli and are not, apparently, on the road to the exterior. In the case of the colloid in the lymph-spaces we are possibly dealing with a reversion, to the colloid state, of material that has entered these spaces in crystalloidal form, and which, because of an overabundant diffusion and consequent chemical changes resulting from an already sufficient supply of thyroid secretion in the organism, has been changed again to the colloid state.

In the structure of goiters we have certain indications of the truth of this hypothesis. A colloid goiter, composed of large alveoli filled with well-formed colloid, gives no symptoms unless these be on the hypothyroidism side of the picture. But suppose we massage such a goiter, increase the blood supply to it, and therefore increase the activity of the cells? Then, in certain cases at least, we may produce the opposite picture of hyperthyroidism, due theoretically to increased resorption of colloid.

In exophthalmic goiter, on the other hand, in which there is the symptom-complex of hyperthyroidism, and the anatomic picture of cellular activity, the alveoli are small and such colloid as is present shows none of the density of normal thyroid colloid. The whole physiologic and anatomic picture points perhaps not to resorption of colloid, but, at least, to an absence of the typical colloid state, if it be not the retention of the crystalloid state or one closely allied thereto. Certainly the cells of exophthalmic goiters are more actively functioning than those of colloid goiters. But it is true that they are active in an abnormal way, because they produce a secretion that does not undergo the normal change into the colloid state. Theoretically the cells themselves may produce, under abnormal conditions, substances which prevent colloidal transformation or the blood stream may bring from other abnormally functioning organs materials that prevent the normal change, so that the colloid, instead of being stored in the acini, is constantly resorbed and the cells of the thyroid are thereby stimulated to increased production.

There are therefore two points of view to be considered in the physiology of goiter; one, that the cells produce a normal secretion that is modified by outside influences; the other that the cells are abnormal in their activities. There is evidence that both are true, and theoretically both may be active in the same way; namely, by influencing the physical character of the colloid.

It was with the idea of testing, roughly at first, whether thyroid colloid (iodine-containing colloid) could be influenced by certain external influences, that the following experiments were made. The very simple methods employed in physico-chemical studies of the colloidal state were used.

Cubes of fresh hog thyroid weighing 1 gram were immersed in dilute solutions of acids and physiologic salt solution for twenty-four hours. $\frac{N.}{200}$ sulphuric, nitric, hydrochloric, acetic, lactic, tartaric and formic acids were used. At the end of twenty-four hours the fluid in which the tissue had been immersed was filtered and the filtrate was boiled on a water bath. The coagula produced by boiling were collected on filter papers, washed, dried, fused, oxidized and finally titrated with $Na_2S_2O_3$, following the method of Hunter.[2] The fresh thyroid contained an average of about 0.3% iodine when treated by this method.

The results of the several experiments were as follows: Using lactic acid, no coagulum was produced by boiling. The coagulum from the tartaric acid tube contained 0.00005 gm. I; from the formic acid, 0.0001 gm. I; from the acetic acid, 0.00028 gm. I; from the sulphuric acid, 0.0004 gm. I; from the nitric acid, 0.00018 gm. I; the hydrochloric acid residue was lost.

These results, rough though they be, are interesting and suggestive, especially if one compares them with Martin Fischer's experiments on the effects of acids on the swelling of (protein) colloids. Fischer, using $\frac{N.}{20}$ acids, found that hydrochloric acid produced the greatest effect in twenty-four hours, and that it was followed by HNO_3, H_2SO_4 and $HC_2H_3O_2$, in the order given. Applying Fischer's conclusions, there is the indication that the changes in the diffusibility or "solution" of the colloid of the thyroid gland is intimately associated with the physico-chemical conditions surrounding it, and that these changes seem to be comparable to those taking place in the kidney in edema and nephritis.[3] If further experiments justify this conception, therapeutic possibilities will at once suggest themselves, and will form the subject of discussion. In the meantime it is my intention to make further experiments to determine the actual differences in diffusibility of thyroid colloid by means of membranes.

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[2] Chem. Centralbl., 1910, XI, 760.

[3] Oedema. New York, 1910, John Wiley & Sons. Das Oedem. Dresden, 1910, Th. Steinkopf.

THE INFLUENCE OF FEEDING IODIDES ON THE CATALYTIC ACTIVITY OF THE RABBIT'S BLOOD.

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Studying the influence of sodium arsenite on the catalytic activity of the rabbit's blood, Duncker and Jodlbauer [1] found that in non-toxic doses this substance increases the power of the blood to decompose hydrogen peroxide in poorly nourished animals. In a series of experiments on rabbits it was found that the administration of potassium or sodium iodide *per os* may lead to an increase of the catalytic activity of the blood of these animals. The technique determining the catalytic activity of the blood was the one used by Kastle and Loevenhart [2], adapted to the purpose as in the investigations of Winternitz.[3] The figures recorded designate the number of cubic centimeters of oxygen liberated in one minute. This is sufficient, although readings were taken every fifteen seconds and frequently for two minutes. With very few exceptions duplicate determinations were carried out and the figures represent the averages of two well-agreeing determinations, the differences not exceeding two cubic centimeters. To eliminate the possibility of a simple salt action a few control experiments were made with sodium chloride. It was the intention to administer the iodide on an empty stomach, but it became evident that the withholding of food is not without an influence on the catalytic activity of the blood. The accompanying Table I registers the days of observation from the beginning of the experiments. Where several observations were made on the same day the hours elapsed after the administration of the drug are recorded. The substance administered and its dose are given. In the starvation experiments, where the animals received only water, the beginning and end are noted; the weight of the animals in grams is added.

In some cases only one observation preceded the administration of the drug. This was deemed sufficient, since according to Winternitz [4] the catalytic activity of the blood of the same rabbit remains nearly constant. No. V really gave nearly constant results, but Nos. IV and XI showed larger variations, which do not seem to be uncommon. The results obtained with the administration of the iodine salts may be briefly summarized as follows:

TABLE II.

Dose of Iodide per Kilo.	No. of Animals.
0.0–1.1 gm.	V(1)o, V(2)o, VIII(1), VIII(2)o
1.6–2.0 gm.	V(3)+? VII(3)+? VIII(3)+, X(3)+, XI(2)o, XII(3)+
2.0–3.0 gm.	I(5)+, II(5)+, III(5)+, IV(4)+, V(4)o, VI(5)+, X(4)+?
3.0–4.0 gm. and over	IV(5)+, IV(6)+, V(5)+, V(6)+, XI(5)+, XII(4)o

Here the dosage in grams is given in parenthesis corresponding to the dosage given in Table I. Wherever a rise of the catalytic activity occurred, whether only transitory or more lasting, a plus sign is affixed, while an "o" signifies that a rise did not occur. It is uncertain whether the rise in No. X(4) with 2-3 gm. per kilo can be attributed to the drug, since the activity on the day of the administration had increased considerably above that noted two days previously. The second day following the administration of the drug the animal died, and at the autopsy a pneumonia was found. The same lesions were found in No. VII, dying on the third day after receiving sodium iodide. In this case no very definite increase of the catalytic activity was noted. Winternitz, Henry and McPhedran [5] state that the catalytic activity of the blood is not increased in pneumonia. Although animal No. X had shown a definite increase in the catalytic activity of its blood in a previous experiment with 1.6-2.0 gm. iodide per kilo, the conditions of this last experiment make it very possible that some other factor besides the administration of the drug played a rôle in the subsequent increase of the catalytic activity.

A glance at Table II shows that a dosage of about 1 gm. iodide per kilo has no effect on the catalytic activity of the blood. With ½ gm. per kilo the effect was uncertain, being decided in Nos. VIII, X and XII, negative in No. XI and doubtful in Nos. V and VII. With 2-3 gm. per kilo the effect was negative in No. V, positive in Nos. I, II, III, IV and VI. With 3 gm. per kilo and over the effect was positive in IV, V and XI, negative in XII. In this latter case it must be remarked that the animal had lost considerable weight after having previously reacted positively to a smaller dose.

Some of the animals, as noted in Table I, died during the administration of the drug or immediately after, without showing any pronounced lesions.

As may be seen from Table I, in several instances the rise of the catalytic activity was only transitory, being limited to the day of the administration of the drug; in others the maximum was reached from the second to the fourth day.

It may be noted that the catalytic activity of the blood of animals observed for a longer period of time, and subjected to a number of experiments like Nos. IV, V and XI, seemed to assume gradually a lower level, perhaps with a tendency to greater oscillations.

The iodides were always given in enough water to make a 4 per cent solution. The sodium chloride in Nos. IV and XI was given in the same dilution. In both these cases the administration of this salt had no effect, while both reacted to the administration of iodide.

The starvation experiments in Nos. II, IV, V and XI showed, with exception of No. IV, some increase of the catalytic activity while in each case a more or less pronounced decrease occurred with the resumption of feeding.

TABLE I.

I.	Wt. 2,270 g.		1 hr.	4½ hr.	6 hr.	2 d.	3 d.	4 d.							Remarks.
	1 d.	5 g KI													
5 g KI.	39.0		41.0	42.5	41.0	44.5	46.5	Dead							No autopsy.
II.	Wt. 2,200 g.		1 hr.	4½ hr.	6 hr.	2 d.	3 d.	4 d.	5 d.	7 d.	8 d.	10 d.	Starved		Died before administration of KI was finished. Stomach tube *in situ proprio*. No lesions of stomach. Œdema of lung.
	1 d.	5 g KI													
5 g KI. Starvation.	32.5		36.0	38.0	37.5	41.5	40.5	41.0	44.0	36.0	37.0	36			
	11 d.	12 d.	Fed	13 d.	14 d.	15 d.	16 d.	17 d.	18 d.	19 d.	21 d.	26 d.	1 g KI.		
	38.0	40.0		38.0	33.5	36.0	36.0	34.0	31.0	29.5	28.0	33.5	Died		
III.	1 d.	2 d.	3 d.	4 d.	5 d.	Wt. 2,150 g.		5 g KI.	9 d.	10 d.					
						6 d.	8 d.								
5 g KI.	36.4	36.5	36.5	35.5	37.0	38.4	35.7		46.0	Died					No autopsy.
IV.	1 d.	3 d.	4 d.	5 d.	8 d.	5 g NaCl.	3 hr.	5 hr.	9 d.	10 d.	11 d.	12 d.	Wt. 1,600 g.		Marked diarrhœa on 22d, 23d, 32d, and 33d days. Autopsy showed congestion and small hæmorrhages in lungs. In stomach, area of congestion about the size of a silver dollar.
													13 d.	15 d.	
5 g NaCl. 4 g KI. Starvation. 5 g KI. 6 g KI.	27.0	28.4	28.9	27.4	23.8		24.9	23.7	25.2	24.4	24.1	23.7	22.9	23.2	
	4 g KI.	3 hr.	5 hr.	16 d.	17 d.	18 d.	Starved	19 d.	20 d.	Fed	22 d.	5 g KI.	3 hr.	5 hr.	
		27.8	25.3	23.9	24.7	23.7		23.6	24.5		17.9		24.7	24.0	
	23 d.	24 d.	25 d.	26 d.	27 d.	28 d.	Wt. 1,300 g.		3 hr.	33 d.	34 d.				
							32 d.	6 g KI.							
	18.6	14.8	19.0	15.5	16.7	15.1	18.1		23.5	19.8	Died				
V.	1 d.	2 d.	3 d.	4 d.	5 d.	Wt. 1,870 g.		1 g KI.	9 d.	10 d.	1 g KI.	11 d.	1 g KI.	12 d.	Marked diarrhœa on 30th, 37th, 46th, and 47th days.
						6 d.	8 d.								
1 g KI. 2 g KI. 3 g KI. 3 g NaI. 4 g KI. Starvation. 5 g KI. 6 g KI. Starvation.	30.4	32.2	30.0	30.0	30.8	30.5	31.3		28.1	30.1		29.3		29.8	
	2 g KI.	13 d.	2 g KI.	14 d.	3 g KI.	15 d.	17 d.	18 d.	3 g NaI.	2½ hr.	4½ hr.	19 d.	20 d.	22 d.	
		28.5		29.4		31.2	32.6	32.6		34.3	30.7	29.1	27.3	28.3	
	25 d.	Wt. 1,700 g.		4 g KI.	3 hr.	5 hr.	30 d.	31 d.	32 d.	Starved	33 d.	34 d.	Fed	36 d.	
		26 d.	29 d.												
	25.6	26.8	25.0		25.6	26.2	23.7	25.3	23.7		26.5	26.5		21.6	
	5 g KI.	3 hr.	5 hr.	37 d.	38 d.	39 d.	40 d.	41 d.	Wt. 1,500 g.		6 g KI.	3 hr.	47 d.	48 d.	
									42 d.	46 d.					
		27.4	26.1	18.8	16.7	18.6	14.9	18.3	14.2	18.0		21.9	20.6	18.1	
	49 d.	Starved	50 d.	Wt. 1,180 g.		Fed	Wt. 1,230 g.		56 d.	58 d.					
				51 d.	52 d.		53 d.	54 d.							
			20.3	22.4	22.5		18.0	20.0	20.6	18.3					
VI.	Wt. 1,850 g.		1½ hr.	5 hr.	2 d.	3 d.									Œdema and extensive hæmorrhages in lungs. In mucosa of stomach two old superficial ulcers without signs of active inflammation.
	1 d.	5 g NaI													
5 g NaI.	30.4		34.3	34.8	31.0	Died									
VII.	Wt. 1,450 g.		3 hr.	5 hr.	2 d.	3 d.	4 d.								Appeared sick on third day, died on fourth. Pneumonia of right lung. Stomach normal.
	1 d.	3 g NaI													
3 g NaI.	26.6		28.3	29.4	27.8	28.0	Died								
VIII.	1 d.	Wt. 1,850 g.		1 g KI.	5 d.	6 d.	1 g KI.	7 d.	8 d.	2 g KI.	9 d.	2 g KI.	10 d.	2 g KI.	Died with first administration of 30 cc. 4 % KI solution. At autopsy no macroscopical lesions found.
		2 d.	4 d.												
1 g KI. 2 g KI.	35.8	35.2	33.6		32.7	33.9		32.1	33.7		32.8		31.0		
	11 d.	13 d.	14 d.	15 d.	16 d.	18 d.	21 d.	23 d.	25 d.	4 % KI.					
	31.7	34.0	34.8	36.0	35.7	35.6	35.3	33.0	33.3	Died					

TABLE I—*Continued.*

IX.	1 d.	2 d.	3 d.	4 d.	5 d.	6 d.	8 d.	5 g KI.						Died immediately after receiving KI. No macroscopical lesions found.
5 g KI.	30.3	32.6	32.4	32.5	30.4	29.9		Died.						
X.	1 d.	Wt. 1,880 g. 2 d.	4 d.	3 g KI.	4 d.	5 d.	6 d.	8 d.	Wt. 1,880 g. 9 d.	10 d.	11 d.	13 d.	4 g NaI	3 hr.	Pneumonia. In stomach a few congested areas.
3 g KI. 4 g NaI.	34.3	32.3	33.1		39.1	42.1	40.5	38	37.4	37.6	35.2	40.2		42.8	
	5 hr.	14 d.	15 d.												
	43.7	51.2	Died												
XI.	1 d.	2 d.	3 d.	Wt. 1,550 g. 4 d.	6 d.	5 g NaCl.	3 hr.	5 hr.	7 d.	8 d.	9 d.	11 d.	13 d.	Starved	Some diarrhœa on 33d day.
5 g NaCl. Starvation. 2 g KI. 5 g KI.	30.8	32.4	29.9	27.1	30.2		30.3	29.5	26.5	29.7	30.0	28.8			
	14 d.	15 d.	16 d.	Fed	17 d.	Wt. 1,250 g. 18 d.	19 d.	23 d.	2 g KI.	3 hr.	24 d.	2 g KI.	25 d.	2 g KI.	
	28.4	26.5	33.5		28.4	28.4	25.9	24.9		24.2	22.5		21.5		
	2 g KI. 26 d.	2 g KI. 27 d.	28 d.	29 d.	31 d.	33 d.	5 g KI.	Wt. 1,350 g. 3 hr.	34 d.	35 d.					
			22.5	24.0	21.9	22.8		30.3	24.4	20.8					
XII.	1 d.	Wt. 1,550 g. 2 d.	3 d.	3 g KI.	4 d.	6 d.	7 d.	8 d.	Wt. 1,100 g. 9 d.	11 d.	4 g NaI	3 hr.	5 hr.	12 d.	On 13th day it was difficult to obtain the necessary blood from the ear vessels of the emaciated rabbit. On 15th day the animal was very sick, refused food. Autopsy: No macroscopical lesions found.
3 g KI. 4 g NaI.	31.3	29.4	30.0		32.0	38.7	39.7	34.1	32.8	33.7		34.4	29.8	35.2	
	13 d.	14 d.	15 d.	17 d.											
	32.5	32.8	30.4	Died											

Wherever an increase of the catalytic activity occurred after the administration of iodide, this cannot be attributed to the presence of iodide as such in the blood. In the cases where the maximum was reached after two or four days the starch iodic acid test made with a few drops of blood had either diminished very considerably or was negative. Furthermore, a simple calculation shows that not sufficient iodide could have been present in the blood to account for the increase of the catalytic activity. Five cubic centimeters of a $\frac{N.}{100}$ solution of potassium iodide containing 0.0083 gm. KI liberated 0.5 cc. oxygen in sixty seconds from 5 cc. neutralized hydrogen peroxide. In all our experiments the Oakland dioxygen was used, containing about 3 per cent hydrogen peroxide. Supposing that the amount of blood of a rabbit is one twentieth of its body weight, a rabbit weighing 1000 gm. would have about 50 cc. blood. The amount of blood used in an experiment did not exceed 0.05 cc. This would be a thousandth part of the total blood. Let the dose of KI be 6 gm. and assume that all of this were present in the blood at one time, the amount of blood used would then contain a thousandth part of the dose, that is, 0.006 gm. KI, an amount insufficient to exercise an appreciable influence on the catalytic activity.

It is evident, therefore, that the rise of the catalytic activity of the blood following the administration of iodide must be due to an influence of the iodide on the organism. This influence manifests itself with any degree of constancy only after rather larger doses much exceeding the therapeutic doses, a reason why this investigation was not carried any farther.

CONCLUSIONS.

1. Potassium or sodium iodide fed to rabbits in large doses may lead to an increase of the catalytic activity of the blood.
2. This increase is not due to the presence of the iodide in the circulating blood.
3. Withholding the food may lead to an increase in the catalytic activity of the rabbit's blood, while resumption of feeding is associated with a drop, in its catalytic activity.

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CONSANGUINEAL DIABETES MELLITUS.

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The occurrence of diabetes in several members of a family is relatively uncommon, but not so infrequent among those remotely related as it is in the case where brothers and sisters are afflicted with the disease. In the absence of exact knowledge of the etiology of the disorder, these instances in which one is tempted to consider some inherited defect as a cause are most interesting.* This is especially so in the case of children who suffer from diabetes. In the notable family, recorded by Charcot, with its four diabetic sons of a diabetic father, their occupation might be regarded as an etiological factor as they were all brewers, obese and gouty; but when diabetes manifests itself during the early years of life in several members of a family, one must consider also the possibility of some inherited factor as a probable cause.

Two families have come to my attention in which two or more children of the same parents have developed diabetes in early youth.

Family G.:† 1. J. G., aged 17, was found to have a low percentage of sugar in his urine on September 23, 1889. He had been in the habit of having his urine examined occasionally because his father had died of diabetes, and also a brother at the age of 18 and he was naturally a little anxious concerning himself. Sugar had not been found in this patient's urine previous to the above date and during the next nine years, from 1889 to 1898, no sugar was detected. In 1898 the urine again contained some glucose, always less than 1 per cent, for several weeks following a period of excessive use of alcohol; but this glycosuria was accompanied by none of the typical diabetic symptoms and disappeared quite promptly. This patient has remained well up to October, 1909.

2. The third son, E. G., a medical student, discovered accidentally, in 1897, that his urine contained sugar. At this time it was found that he was voiding an average of 120 ounces of urine per day but there were, at first, no pronounced symptoms noted by the patient other than a large volume of urine. On advice he dieted and thus reduced the volume of urine considerably. The 24 hour quantity of October 21, 1897, amounted to 53 ounces with 12 grains of sugar to the ounce (1590 cc. urine, 42 grams sugar). A short while after this he began to fail rapidly and by January 29, 1898, he had lost forty pounds in weight. Death occurred in the following month.

The second family, S., is not known to have any diabetic tendency in father, mother or grandparents. The father and mother are both strong, healthy people.

The first child, W. S., developed excessive thirst at the age of six years and on examination was found to have sugar in his urine. Up to this time he had been a healthy child having had only one sickness, measles. He died in coma one week after the onset of the symptoms.

The second child, F. S., developed his first symptoms at the age of eleven years and six months. He had excessive thirst and passed large amounts of sugar. He succumbed to his disease in six months after its onset.

The third child, L. S., was healthy until his seventeenth year when he began to have excessive thirst and an enormous appetite. Sugar in large amounts was constantly found in his urine up to his death which occurred about one year later.

R. S. had had no previous sickness, with the exception of scarlet fever, until the development of typical symptoms in his ninth year. This child came under my observation. He had lost several pounds in weight, had a fair appetite and excessive thirst. He voided on an average nearly two liters of urine per day and the sugar content ran as high as 10 per cent and was 100 grams on a restricted diet. He developed some cough and night sweats in the course of a few months and succumbed to the disease in coma.

In a careful perusal of the literature I have endeavored to collect all of the cases of diabetes occurring in brothers and sisters where the disease manifested itself in the early part of life. The following is a summary of the cases:

Richard Morton[1] reported four children of a family who became successively diabetic at the age of dentition. One of these survived at least four years.

Isenflamm[2] knew of seven children all of whom became diabetic on reaching the age of eight to nine years. The parents were healthy.

Marsh[3] "had heard of instances" in families where the disease was transmitted to the fourth generation.

Griessinger[4] found but three instances recorded in the literature of parents or fellow children having the disease.

Mosler[5] mentions a father and mother, both diabetic; two daughters both developed diabetes and a son of one of those daughters became diabetic also.

Bence Jones[6] has recorded two brothers and one sister, ranging in age from seven to fifteen years, who had diabetes.

Durand Fardel[7] has cited a family reported by W. Prout in which the disease manifested itself in three generations. The father was diabetic, and two of his children, son and daughter, became afflicted in adult life; a child of the woman developed diabetes before maturity.

Fardel[8] also mentions three brothers who consulted Thomas

* As an explanation of the degeneration of the islands of Langerhans in young diabetics Weichselbaum has suggested an hereditary defect which might render these structures more susceptible to toxic influences. Wien. klin. Wchnschr., 1911, XXIV, 153.

† I am indebted to my friend, Dr. Edward L. Keyes, Jr., for the complete history of this family.

[1] Opera medica. Amsterdam, 1696, I, VIII, 22-24.

[2] Versuch einiger praktischen Anmerkungen über die Eingeweide. Erlangen, 1784.

[3] Dublin Q. J. M. Sc., 1854, XVII, 17, footnote.

[4] Studien über Diabetes. Arch. f. physiol. Heilk., 1859, III, 16.

[5] Brit. M. J., 1864, VIII, 734.

[6] Med. Times and Gaz., 1865, XIV, 58.

[7] The reference to Prout's publication is not given by Fardel, and I have been unable to find this case in Prout's writings.

[8] Traité clinique et thérapeutique du diabète. Paris, 1869, 296.

Leigh for diabetes. The ages of the patients are not stated. Fardel had observed two families where there was a notable inherited predisposition. In one of these a man thirty-two years old had diabetes, and he had lost his father and a twenty-seven year old brother of the same disease. The other case was that of a woman of forty-seven years who had a severe type of the disorder. Her father, mother, and two of her sisters had died of diabetes, and her son, age fifteen, had sugar in his urine.

Seegen[9] summarizes his cases by stating that in ten instances the brother or sister was diabetic, while in four of these families the father or mother was diabetic and one or more children had died of the disease.

Schmitz[10] has recorded diabetes in two sisters, four and five years of age; the mother was also diabetic.

Rossbach[11] had charge of two diabetic children of a diabetic father.

Dickenson[12] quotes an oral communication of Thomas Watson, who had seen three children, two brothers and a sister, all with diabetes.

West[13] had charge of a girl three years old who had diabetes. Her brother and sister had died of the same disease at the age of two and two and a half years respectively.

Senator[14] knew of an instance of two brothers being affected, and also the family of a Polish Jew in which four children died of diabetes.

Frerichs[15] recorded the cases of a girl of twelve years and her brother, three years older. No reference is made to the parents.

Hertzka[16] knew of three sisters with the disease.

Roberts[17] knew of eight children in a family, all of whom became diabetic.

Pavy[18] mentions three children of the same parentage, two boys and a girl, who had diabetes; the father and mother were both healthy. In a second family the mother and grandmother were diabetic, while in the third generation there were four diabetic children. He refers also to the case of a woman who came to him for treatment for diabetes. She had lost a sister from diabetes at twenty-one years of age, and two brothers at twenty-eight and thirty-five years of age.

Flint,[19] in a summary, without references to the sources of his cases, reports diabetes in two sisters (two instances), another family where a brother and sister were affected and also two instances of two brothers being diabetic. The ages are not stated.

Auerbach[20] has referred to a remarkable family; the father had some form of psychosis, and the mother diabetes. There were eleven children, and of these five were mentally defective and two diabetic. In the third generation there were several cases of diabetes or psychosis.

Saundby[21] reported three sisters who became affected between the ages of eight and ten years.

Bieloousoff[22] has recorded a brother and sister with diabetes. The boy was fourteen and the girl five years old.

Wegeli[23] has observed a number of consanguineal instances of diabetes. In one family were two brothers; one died at 22 months and the other at 12 years of age. There was no diabetic ancestry, but the mother and grandmother suffered from migraine. In a second family the father was diabetic, and his two daughters, ages four and fourteen, developed the disease. The father was also diabetic in the third family, and two of his sons died of the disease at the ages of four and seven years. In the fourth family a girl of eleven became afflicted. She had lost a younger brother of diabetes, but the parents were healthy.

Von Noorden[24] has recorded a remarkable family, in several members of which diabetes developed in three generations. There were two children in the third generation.

Pleasants[25] reported two boys and two girls, in the fourth generation, in a diabetic family, similar to that reported by Von Noorden.

Haas[26] knew of a girl of nine years and her brother, aged five who were diabetic.

Gordon[27] has observed two sons, ages three and four years, of a diabetic mother. In these children diabetes was associated with myxœdema, and marked improvement followed the use of thyroid extract. The father was neurotic.

Rowell[28] reported a boy aged five and his sister, with diabetes. Naunyn[29] recorded the cases of two diabetic children, whose ancestry is not stated, but presumably of a non-diabetic family.

Langaker[30] recorded a family of eight children where parents and grandparents were healthy. Five brothers and sisters died of diabetes between the ages of four and eleven.

[9] Diabetes Mellitus. Leipzig, 1870, 62.
[10] Berl. klin. Wchnschr., 1873, X, 211.
[11] Berl. klin. Wchnschr., 1873, XI, 258.
[12] Diseases of the Kidneys and Urinary Derangements. London, 1875, 74.
[13] Diseases of Infancy and Childhood. London, 1875, 717.
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[18] Deutsche med. Wchnschr., 1886, XII, 478.
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NOTES ON NEW BOOKS.

Modern Medicine: Its Theory and Practice in Original Contributions by American and Foreign Authors. Edited by WILLIAM OSLER, M. D., etc. Assisted by THOMAS MCCRAE, M. D., etc. In Seven Volumes, Royal 8 vo. Illustrated. (*Philadelphia and New York: Lea and Febiger, 1907-1910.*)

The appearance of the last volume of Osler's Modern Medicine marks the culmination of a great editorial work. By far the most ambitious and successful collection of monographs ever attempted in the field of internal medicine on this Continent. In fact its only rival of importance in the English speaking world is Allbutt's System which has reappeared in a new and improved edition in England. A detailed comparison of the two would be out of place here, but we might say that the English System surpasses in presswork and style as its greater price justifies, but on the whole the American is more modern and better covers the field. The individual volumes have been reviewed in these pages with the exception of volume five and volume seven.

Volume five covers the Diseases of the Digestive Tract and contains a number of excellent chapters among those specially deserving notice are Riesman on the Diseases of the Mouth and Salivary Glands which brings together in considerable detail much that is scattered in the medical journals. Functional Diseases of the Stomach by Julius Friedenwald are also well described, with very full notes on treatment. Stengel's chapter on Diseases of the Intestines is very thorough and has excellent discussions of the pathology and bacteriology of the subject. Opie's handling of Diseases of the Pancreas is much the best in any system and the last chapter by A. O. J. Kelly, on the Diseases of the Liver, Gall-Bladder and Biliary Ducts, is only equalled in English by Rolleston's large work on the same subject. Altogether it is a most satisfactory and valuable addition to our literature.

The seventh volume, Diseases of the Nervous System, is a fitting climax to the series and contains an array of most excellent monographs. In the introductory paper of this volume, Barker discusses the senses and their symptomatology and presents in an unusually lucid manner the newer terminology and methods of investigators. Among the many excellent chapters those which most impress us are Spiller's Diseases of the Motor Tracts, Buzzard's Diffuse and Focal Diseases of the Spinal Cord, Cushing's Tumors of the Brain and Meninges and Thomas on Diseases of the Cerebral Blood Vessels. This last is undoubtedly the most interesting chapter in the volume and contains a mass of statistical and clinical information very carefully arranged in addition to the excellent pathological section and a charming historical introduction. Nowhere else so far as we know can the student find such a thorough, authoritative and at the same time readable presentation of apoplexy. The remaining chapters are contributed by Colin K. Russel, Edwin Bromwell, Joseph Collins, Bernard Sachs, and others which want of space forbids us to discuss in detail.

As a whole the volume is well gotten up, has good illustrations, and will prove not the least valuable part of the System. The editors and publishers are to be congratulated on the work which puts the American medical profession under great obligations.

A Handbook of Medical Diagnosis for the use of Practitioners and Students. BY J. C. WILSON, M. D., etc. Illustrated. Third Edition. Thoroughly Revised. $6.00 (*Philadelphia and London: J. B. Lippincott Company, 1911.*)

The popularity of this work is evidenced by its third appearance within two years. Its first appearance was noted in our pages (March, 1910). Since then the work has grown and become, it now seems to us, too cumbersome. The additions are important but it is a pity that some paring was not done. As before, the book is richly illustrated, and no doubt it will continue to find favor with the profession for it is a useful work to have at hand for reference.

A Manual of Fevers. BY CLAUDE BUCHANAN KER, M. D., F. R. C. P., etc. $2.50. (*London: Henry Frowde and Hodder & Stoughton. Oxford University Press, 1911.*)

This is an excellent manual and it is a pleasure to call attention to it. After an introductory chapter, and one on The Examination of Rashes and Throats, the author successively describes measles, rubella, scarlet fever, smallpox, vaccinia, chickenpox, typhus fever, enteric fever, diphtheria, erysipelas, whooping-cough, mumps, and cerebro-spinal meningitis. The student who makes himself master of this manual will find his road to practice much smoothed. The clinical presentation of these fevers by Dr. Ker is done with brevity but skill and clearness, and his descriptions are admirable. He is already well known for his first-class textbook on Infectious Diseases, and this small manual will add to his well established repute as a physician and author.

A Text-book of Meat Hygiene. With Special Consideration of Ante-Mortem and Post-Mortem Inspection of Food-Producing Animals. BY RICHARD EDELMANN, Ph. D., Medical Counsellor; Royal State Veterinarian of Saxony; Professor at the Royal Veterinary High School in Dresden. Authorized Translation Revised for America, by JOHN R. MOHLER, A. M., V. M. D., Chief, Pathological Division, U. S. Bureau of Animal Industry and ADOLPH EICHHORN, D. V. S., Senior Bacteriologist. Pathological Division, U. S. Bureau of Animal Industry. Illustrated. $4.50 (*Philadelphia and New York: Lea & Febiger, 1911.*)

This is one of those standard text-books which every health officer engaged in the inspection of meat should read with great care. It is a most thorough work and for its size the best one for the average student. That a second edition has been called for is a proof of its excellence. Although written by a foreigner, it has been carefully adapted by its translators to serve its purpose well in this country.

Pain. Its Causation and Diagnostic Significance in Internal Diseases. By Dr. Rudolph Schmidt. Translated and Edited from the Second Enlarged and Revised Edition by Karl M. Vogel, M. D., and Hans Zinsser, M. D. Second Edition. $3.00. (*Philadelphia and London: J. B. Lippincott Company, 1911.*)

This work is probably not as well known as it should be to American physicians, so that we are glad to draw their attention to this new edition of a book which they will be well repaid for by mastering its many details. The author has carefully analyzed the causes of pain in the different organs and portions of the body, and in this way has made their diagnosis and significance more apparent and easily comprehended.

The Diseases of Infancy and Childhood for the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M. D., etc. Assisted by John Howland, M. D., etc. Sixth Edition. Fully Revised. Illustrated. $6.00. (*New York and London: D. Appleton & Co., 1911.*)

The preeminence of this text-book has long been well recognized by the profession. There is no other treatise on these diseases by any American author which is so thorough and masterly. Doctors devoted to the study and practice of children's diseases will be especially glad to see this fresh edition, which contains much that the last edition did not have—new work that has appeared and proved of value within the last few years. Dr. Holt is to be congratulated on having secured the help of Dr. Howland, and it is a pleasure to see his name on the title page.

Manual of Pathology, Including Bacteriology, the Technic of Post-mortems, and Methods of Pathologic Research. By W. M. Late Coplin, M. D., etc. Fifth Edition. Rewritten and Enlarged. Illustrated. Price $4.50. (*Philadelphia: P. Blakiston's Son & Co., 1911.*)

For the average student in pathology this is one of the most serviceable English text-books on the subject, and as it has passed through five editions in the last fifteen years the author has kept it abreast with the times, incorporating the most important new developments. The book is divided in three parts: (1) General Pathology; (2) Special Pathology; and (3) Post-mortem and General Laboratory Technic. Almost four hundred pages are devoted to Part I, and six hundred to Part II. Attention is merely drawn to this point to indicate the relative proportion of the two subjects. Many of the illustrations are not as good as they ought to be, but the general appearance of the volume is pleasing.

The Medical History of the State of Indiana. By G. W. H. Kemper. $2.50. (*Chicago, Ill.: American Medical Association Press, 1911.*)

Some four years searching among the scanty records of all that concerns the history of medicine in America—scantiest often in details concerning the men most worthy of note—makes me keenly appreciative of the labors of any confrère in the same field and able as well to appreciate the amount of work Dr. Kemper has put into his Medical History of the State of Indiana. He has not only gathered a valuable mass of biographical matter, but has put on record a great deal of the precious history of each county, setting forth the civic progress, climatic conditions, epidemics, the activities of medical societies, and the growth of the natural sciences, etc., thus rendering the book widely useful to future historians of the state.

In a paper on the early history of Eastern Indiana (p. 34), Dr. Joel Pennington has the following: "About New Year's I purchased from an old friend (Quaker) a hindquarter of beef, which cost, in the payment of a dollar bill, 2½ cents per pound. Pork was worth from $1.25 to $1.50 per one hundred pounds; corn, 10 cents per bushel; potatoes, 12½ cents; turnips, the same; sweet potatoes, 25 cents; wheat, 37½ cents, and all other products of the soil in proportional prices."

I suppose that great, original surgeon, Dr. John S. Bobbs, (1809-1870) is one of the most interesting characters of the state (p. 71). In 1867 he operated successfully for gall stones, entitling his paper describing the procedure in the State Transactions in 1868, a "Case of Lithotomy of the Gall Bladder." Bobbs fully appreciated the importance of medical journalism, and at his death he gave $2000 for a dispensary and $5000 for a free medical library.

That other great surgeon, Joseph Eastman, appears before us in his familiar heavy fur overcoat with its broad sealskin collar, in a satisfactory appreciative biography. The work fulfils well the function of a volume of this class in giving abundant details, and in not slighting many of the humble members of the profession. It is a work of this kind that is most appreciated by the more general historian. I have been delighted in the course of the building up of my own Cyclopedia of Medical Biographies, which is now almost through the press, to find several just such able coadjutors working in various parts of the country. Dr. Leartus Connor, lately deceased, has fully written up the history of Michigan; Dr. Slaughter has in preparation a history of medicine in Virginia.

The surgeon and the internist among medical men are content to build upon the foundations of their immediate predecessors, and to see a wide present field of utility for their services. The medical historian, however, delves in the remote past, and seeks to interest the present generation but trusts for a full appreciation of his labors to the generation yet to come which he shall never see face to face. Of all the laborers in the philanthropic field of our craft, he is the most purely altruistic, as he embalms his subjects, or rather makes them live again for future generations, as he ever cries, "Honor to whom honor is due."

Howard A. Kelly.

Haut-krankheiten Sexuellen Ursprungs Bei Frauen. Von Dr. Oskar Scheuer. Mk. 9.50. (*Berlin und Wien: Urban & Schwarzenberg; New York: Rebman Company, 1911.*)

Dr. Scheuer has written a valuable dermatological treatise on the disturbances which are associated with puberty, chlorosis, menstruation, diseases of the sexual organs, castration, pregnancy, childbirth, the puerperium and climacteric in women. He has collected his data from a wide number of sources, and his study is an important one for all general practitioners as well as for skin specialists. The definite dependence of many of these affections on some sexual cause is not in every case well established, but this compendium of their occurrence in different periods of woman's life should prove most helpful to students in the further elucidation of the unknown origin of many of these diseases.

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Studies in Dermatology. By T. C. Gilchrist, M. D., and Emmet Rixford, M. D. 1 volume of 164 pages and 41 full-page plates. Price, bound in paper, $3.00.

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Pathology of Toxalbumin Intoxications. By Simon Flexner, M. D. 1 volume of 150 pages with 4 full-page lithographs. Price, in paper, $2.00.

Pneumothorax. A Historical, Clinical, and Experimental Study. By Charles P. Emerson, M. D. Price, in paper, $4.00.

Operations of 459 Cases of Hernia, in the Johns Hopkins Hospital, from June, 1889, to January, 1899. By Jos. C. Bloodgood, M. D. Price, in paper, $3.00.

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The Johns Hopkins Press, Baltimore, Md.

BOOKS RECEIVED.

The Goulstonian Lectures on the Sensibility of the Alimentary Canal. Delivered at the Royal College of Physicians on March 14, 16 and 21, 1911. By Arthur F. Hertz, M. A., M. D. (Oxon.), F. R. C. P. 1911. 8vo. 83 pages. Henry Frowde, London; Hodder & Stoughton, London.

Ticks. A Monograph of the Ixodoidea. By George H. F. Nuttall, M. A., M. D., Ph. D., Sc. D., F. R. S., Cecil Warburton, M. A., F. Z. S., W. F. Cooper, B. A., F. Z. S., F. L. S., and L. E. Robinson, A. R. C. Sc. (Lond.). Part II. By George H. F. Nuttall and Cecil Warburton. Bibliography of the Ixodoidea. By George H. F. Nuttall, L. E. Robinson and W. F. Cooper. 1911. 4to. University Press, Cambridge.

Scientific Memoirs. New Series. By Officers of the Medical and Sanitary Departments of the Government of India. Superintendent Government Printing, Calcutta, India.

No. 43. The Relation of Tetanus to the Hypodermic or Intramuscular Injection of Quinine. By Lieutenant-Colonel Sir D. Semple, Kt., M. D. 1911. 4°. 61 pages.

No. 44. The Preparation of a Safe and Efficient Antirabic Vaccine. By Lieutenant-Colonel Sir D. Semple, Kt., M. D., D. P. H., R. A. M. C. (Retired). 1911. 4°. 32 pages.

No. 45. Epidemic Dropsy in Calcutta. Being the First Report of an Enquiry Carried Out by Major E. D. W. Greig, M. D., D. Sc., I. M. S. 1911. 4°. 47 pages.

No. 46. Malaria in the Punjab. By Major S. R. Christophers, M. B., I. M. S. 1911. 4to. 197 pages.

No. 47. Dysentery and Liver Abscess in Bombay. By Major E. D. W. Greig, M. D., D. Sc., I. M. S., and Captain R. T. Wells, M. A., M. B., I. M. S. 1911. 4to. 78 pages.

Handbuch der biochemischen Arbeitsmethoden. Herausgegeben von Prof. Dr. Emil Abderhalden. Fünfter Band. Erster Teil. Mit 168 teils mehrfarbigen Textabbildungen. 1911. 8°. 672 pages. Urban & Schwarzenberg, Berlin und Wien.

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. A Concise Introduction to the Principles of Clinical Localization in Diseases and Injuries of the Central Nervous System. By Robert Bing. Translated by F. S. Arnold, B. A., M. B., B. Ch. (Oxon.). Revised by David I. Wolfstein. With seventy illustrations. [1909.] 8vo. 215 pages. Rebman Company, New York.

The Mechanism of Life. By Dr. Stéphane Leduc. Translated by W. Deane Butcher. [1911.] 8vo. 172 pages. Rebman Company, New York.

Principles of Anatomy. The Abdomen Proper, Described and Illustrated by Text and Plates. By William Cuthbert Morton, M. A., M. D. (Edin.). 1911. 8vo. 174 pages. Rebman Company, New York.

Refraction and Visual Acuity. By Kenneth Scott, M. D., C. M., F. R. C. S. Edin. With sixteen illustrations and a colored plate. [1911.] 12°. 191 pages. Rebman Company, New York.

Cesare Lombroso. A Modern Man of Science. By Hans Kurella, M. D. Translated from the German by M. Eden Paul, M. D. [1910.] 12°. Rebman Company.

The Practice of Medicine. By Frederick Taylor, M. D., F. R. C. P. Ninth edition. 1911. 8vo. 1121 pages. Macmillan Company, New York.

A Practical Handbook of the Diseases of the Ear. By William Milligan, M. D., and Wyatt Wingrave, M. D. With 239 illustrations and 6 colored plates. 1911. 8vo. 596 pages. Macmillan and Company, London.

A Pocket Medical Dictionary. Giving the Pronunciation and Definition of the Principal Words used in Medicine and the Collateral Sciences. By George M. Gould, A. M., M. D. Sixth edition, revised and enlarged, 34,000 words. 1911. 16°. 1005 pages. Blakiston's Son & Co., Philadelphia.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by Henry W. Cattell, A. M., M. D. Volume III. Twenty-first Series. 1911. 8vo. 304 pages. J. B. Lippincott Company, Philadelphia and London.

Vaccine-Therapy. By William G. Dwinell, M. D. Fiske Fund Prize Dissertation. No. LIV. 1911. 8vo. Providence.

The Problem of Race Betterment. By J. Ewing Mears, M. D., LL. D. 1910. 8vo. 45 pages. Wm. J. Dornan, Philadelphia.

Surgical Applied Anatomy. By Sir Frederick Treves, Bart. G. C. V. O., C. B., LL.D., F. R. C. S. Sixth edition, revised by Arthur Keith, M. D., LL. D. Aber., F. R. C. S. Eng. Illustrated with 137 figures, including 58 in color. 1911. 16°. 676 pages. Lea & Febiger, Philadelphia & New York.

Manual of Pathology. Including Bacteriology, the Technic of Post-mortems, and Methods of Pathologic Research. By W. M. Late Coplin, M. D. Fifth edition, rewritten and enlarged. With six hundred and twelve illustrations and twelve plates, eleven of which are in colors. 1911. 8vo. 1139 pages. P. Blakiston's Son & Co., Philadelphia.

Transactions of the Philadelphia Academy of Surgery. Volume XIII. 1911. 8vo. 228 pages. Printed for the Academy, Philadelphia.

Handbook of Suggestive Therapeutics, Applied Hypnotism, Psychic Science. A Manual of Practical Psychotherapy, Designed Especially for the General Practitioner of Medicine and Surgery. By Henry S. Munro, M. D. Third edition, revised and enlarged. 1911. 8vo. 409 pages. C. V. Mosby Company, St. Louis.

A Manual of Surgery. By Francis T. Stewart, M. D. Second edition. With 553 illustrations. 1911. 8vo. 682 pages. P. Blakiston's Son & Co., Philadelphia.

Laboratory Studies in Tropical Medicine. By C. W. Daniels, M. B. Camb., M. R. C. P. Lond., and H. B. Newham, M. R. C. S. Eng., L. R. C. P. Lond., D. P. H. Camb., D. T. M. and H. Camb. Third edition, thoroughly revised, with many new and additional illustrations. 1911. 8vo. 535 pages. P. Blakiston's Son & Co., Philadelphia.

Isthmian Canal Commission. A Report on Hemoglobinuric Fever in the Canal Zone. A Study of Its Etiology and Treatment. By W. E. Deeks, M. A., M. D., and W. M. James, M. D. Published by the Department of Sanitation. 1911. 4°. 177 pages. Isthmian Canal Commission Press, Mount Hope, Canal Zone.

A Cross-Section Anatomy. By Albert C. Eycleshymer, B. S., Ph. D., M. D., and Daniel M. Schoemaker, B. S., M. D. Average Position of Organs from Eleven Reconstructions. By Peter Potter, A. M., M. D. Sections of the Female Pelvis. By Carroll Smith A. B., M. D. Drawings. By Tom Jones. 1911. Fol. 373 pages. D. Appleton and Company, New York and London.

A Manual of Pathology and Morbid Anatomy. By T. Henry Green, M. D., F. R. C. P. Eleventh edition. Revised and enlarged by W. Cecil Bosanquet, M. A., M. D. Oxon., F. R. C. P. Lond. With three hundred and fifty illustrations. 1911. 8vo. 642 pages. Lea & Febiger, Philadelphia and New York.

Immune Sera. A Concise Exposition of the Main Facts and Theories of Infection and Immunity. By Charles Frederick Bolduan. Fourth edition, rewritten and enlarged. 1911. 12°. 226 pages. John Wiley & Sons, New York; Chapman & Hall, Limited, London.

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A Manual of Clinical Diagnosis by Means of Laboratory Methods. By Charles E. Simon, B. A., M. D. Seventh edition, enlarged and thoroughly revised. Illustrated with 168 engravings and 25 plates. 1911. 8vo. 778 pages. Lea & Febiger, Philadelphia and New York.

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Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. Volume III. September, 1911. 8vo. 328 pages. Lea & Febiger, Philadelphia and New York.

Manual of the Diseases of the Eye. By Charles H. May, M. D. Seventh edition, revised. With 362 original illustrations, including 22 plates, with 62 colored figures. 1911. 12°. 407 pages. William Wood and Company, New York.

Treatment of Neurasthenia by Teaching of Brain Control. By Dr. Roger Vittoz. Translated by H. B. Brooke. 1911. 12°. 117 pages. Longmans, Green and Co., London, New York, Bombay and Calcutta.

Mental Mechanisms. By William A. White, M. D. 1911. 8vo. 151 pages. Nervous and Mental Disease Monograph Series. No. 8. The Journal of Nervous and Mental Disease Publishing Company, New York.

Joint Tuberculosis. By Leonard W. Ely, M. D. Illustrated. 1911. 8vo. 243 pages. William Wood and Company, New York.

Lateral Curvature of the Spine and Flat-Foot, and Their Treatment by Exercises. By J. S. Kellett Smith, F. R. C. S. (Eng.). 1911. 8vo. 137 pages. John Wright and Sons, Ltd., Bristol; Simpkin, Marshall, Hamilton, Kent & Co., Ltd., London.

The Human Atmosphere, or the Aura Made Visible by the Aid of Chemical Screens. By Walter J. Kilner, B. A., M. B. Cantab., M. R. C. P., etc. Illustrated. [1911.] 12 mo. 329 pages. Rebman Company, New York.

An Introduction to Therapeutic Inoculation. By D. W. Carmalt Jones, M. A., M. D. (Oxon.), M. R. C. P. (Lond.). 1911. 12mo. 171 pages. Macmillan and Company, London.

Three Contributions to the Sexual Theory. By Prof. Sigmund Freud, LL. D. Authorized translation by A. A. Brill, Ph. D., M. D. With Introduction by James J. Putnam, M. D. 1910. 8vo. 91 pages. Nervous and Mental Disease Monograph Series. No. 7. The Journal of Nervous and Mental Disease Publishing Company, New York.

University of Pennsylvania. Contributions from the William Pepper Laboratory of Clinical Medicine. (Reprints.) No. 7 1909-1910. Philadelphia.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by Sir John Batty Tuke, M. D., and James Ritchie, M. D. Vols. X and XI, 1911. 8vo. Oliver and Boyd, Edinburgh.

A Manual of the Diseases of Infants and Children. By John Ruhräh, M. D. Illustrated. Third edition, thoroughly revised. 1911. 12mo. 534 pages. W. B. Saunders Company, Philadelphia and London.

Hospital Management. A Handbook for Hospital Trustees, Superintendents, Training-School Principals, Physicians, and All Who are Actively Engaged in Promoting Hospital Work. Edited by Charlotte A. Aikens. Illustrated. 1911. 8vo. 488 pages. W. B. Saunders Company, Philadelphia and London.

The Care of the Baby. A Manual for Mothers and Nurses. Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M. D. Fifth edition, thoroughly revised. 1911. 8vo. 455 pages. W. B. Saunders Company, Philadelphia and London.

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Practical Cystoscopy and the Diagnosis of Surgical Diseases of the Kidneys and Urinary Bladder. By Paul M. Pilcher, A. M., M. D. With 233 illustrations, 29 of them being in colors. 1911. 8vo. 398 pages. W. B. Saunders Company, Philadelphia and London.

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A Text-Book of Medical Diagnosis. By James M. Anders, M. D., Ph. D., LL. D., and L. Napoleon Boston, A. M., M. D. With 418 illustrations in the text and 25 plates, 17 of them in colors. 1911. 8vo. 1195 pages. W. B. Saunders Company, Philadelphia and London.

Lehrbuch der Augenheilkunde. In der Form klinischer Besprechungen. Von Dr. Paul Römer. Mit 186 Textillustrationen und 13 farbigen Tafeln. 1910. 4°. 1028 pages. Urban & Schwarzenberg, Berlin und Wien; Rebman Company, New York.

Hautkrankheiten sexuellen Ursprungs bei Frauen. Von Dr. Oskar Scheuer. 1911. 8vo. 203 pages. Urban & Schwarzenberg, Berlin und Wien; Rebman Company, New York.

Kursus der normalen Histologie. Ein Leitfaden für den practischen Unterricht in der Histologie und mikroskopischen Anatomie. Von Rudolf Krause. Mit 30 Figuren im Text und 208 mehrfarbigen Abbildungen auf 98 Tafeln nach Originalzeichnungen des Verfassers. 1911. 8vo. 441 pages. Urban & Schwarzenberg, Berlin und Wien; Rebman Company, New York.

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